UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549
FORM 10-K

(Mark One)

☒ **ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the fiscal year ended December 31, 2021

OR

☐ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the transition period from to

Commission file number 001-04321

CENTESSA PHARMACEUTICALS PLC

(Exact name of registrant as specified in its charter)

England and Wales	**98-1612294**
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)

3rd Floor
1 Ashley Road
Altrincham
Cheshire WA14 2DT
United Kingdom
(Address of principal executive offices and zip code)

+44 203 9206789, ext. 9999
Registrant's telephone number, including area code

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Ordinary shares, nominal value £0.002 per share	CNTA	Nasdaq Stock Market, LLC*
American Depositary Shares, each representing one ordinary share, nominal value £0.002 per share	CNTA	Nasdaq Stock Market, LLC

*Not for trading, but only in connection with the listing of the American Depositary Shares on The Nasdaq Stock Market, LLC.

Indicate by check mark whether the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes ☐ No ☒

Indicate by check mark whether the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes ☐ No ☒

Indicate by check mark whether the registrant: (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports); and (2) has been subject to such filing requirements for the past 90 days. Yes ☒ No ☐

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes ☒ No ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See the definitions of "large accelerated filer," "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act. (Check one):

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act.

Large accelerated filer	☐	Accelerated filer	☐
Non-accelerated filer	☒	Smaller reporting company	☐
		Emerging growth company	☒

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act.☐

Indicate by check mark whether the registrant has filed a report on and attestation to its management's assessment of the effectiveness of its internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act (15 U.S.C. 7262(b)) by the registered public accounting firm that prepared or issued its audit report. ☐

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Act).Yes ☐ No ☒

As of June 30, 2021, the aggregate market value of the voting and non-voting common equity held by non-affiliates of the Registrant, based on the last reported sales price of the Registrant's ordinary shares, nominal value £0.002 per share, on The Nasdaq Global Select Market on such date, was approximately $1,073,339,335.

The registrant had outstanding 94,020,005 ordinary shares as of March 21, 2022.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of this Annual Report on Form 10-K incorporate by reference certain information from the registrant's definitive proxy statement for its 2022 annual meeting of shareholders (the "Proxy Statement"), which the registrant intends to file pursuant to Regulation 14A with the Securities and Exchange Commission not later than 120 days after the registrant's fiscal year end of December 31, 2021, or an amendment on Form 10-K/A filed with the SEC within 120 days after the end of our fiscal year. Except with respect to information specifically incorporated by reference in this Form 10-K, the Proxy Statement is not deemed to be filed as part of this Form 10-K.

Summary of the Material Risks Associated with Our Business

Our business is subject to numerous risks and uncertainties that you should be aware of in evaluating our business. These risks are described more fully in Item 1A - Risk Factors, and include, but are not limited to, the following:

- We may not be successful in our efforts to use our differentiated asset-centric business model to build a pipeline of product candidates with commercial value.
- A single or limited number of programs or product candidates may comprise a large proportion of our value.
- We face challenges, risks and expenses related to the integration of the operations of our asset-centric Centessa Subsidiaries, as well as the management of the expected growth in the scale and complexity of our operations.
- We, and our subsidiaries have incurred net losses since inception, and we expect to continue to incur losses for the foreseeable future and may never achieve or maintain profitability.
- We will need substantial additional funds to advance development of our product candidates, and we cannot guarantee that we will have sufficient funds available in the future to develop and commercialize our current or future product candidates.
- Our credit facility and payment obligations under the Note Purchase Agreement with Cocoon SA LLC, an affiliate of Oberland Capital as agent for the Purchasers, contain operating and financial covenants that restrict our business and financing activities, are subject to acceleration in specified circumstances and may adversely affect our financial position or results of operations and our ability to raise additional capital which in turn may increase our vulnerability to adverse clinical or regulatory developments or economic or business downturns or which may result in Oberland Capital taking possession of our assets and disposing of any collateral.
- Our product candidates are in various stages of development, including many in preclinical stages, and may fail in development or suffer delays that materially adversely affect their commercial viability.
- We may not be successful in our efforts to identify, discover, in-license or otherwise acquire additional product candidates and may fail to capitalize on programs or product candidates that may represent a greater commercial opportunity or for which there is a greater likelihood of success.
- Success in preclinical studies or early clinical trials may not be indicative of results obtained in later trials.
- We may encounter substantial delays or challenges in the initiation, conduct or completion of our clinical trials, and the results of clinical development are uncertain.
- Even if we complete the necessary preclinical studies and clinical trials, the marketing approval process is expensive, time-consuming and uncertain and may prevent us from obtaining approvals for the commercialization of our product candidates.
- We may be unable to obtain U.S. or foreign regulatory approval and, as a result, unable to commercialize our product candidates.
- We rely, and expect to continue to rely, on third parties to conduct our preclinical studies, clinical trials, and manufacturing activities and if these third parties perform in an unsatisfactory manner, our business could be substantially harmed.
- Preclinical and clinical development is a long, expensive and uncertain process, and we may terminate one or more of our current preclinical and/or clinical development programs.

Summary of the Material Risks Associated with Our Business (continued)

- We could experience manufacturing problems that result in delays in our development or commercialization of our programs or otherwise harm our business.
- Business interruptions resulting from the COVID-19 outbreak or similar public health crises or the Russia-Ukraine war could cause a disruption of the development of our product candidates and adversely impact our business.
- If we are unable to obtain and maintain sufficient patent and other intellectual property protection for our product candidates and technology or other product candidates that may be identified, or if the scope of the intellectual property protection obtained is not sufficiently broad, our competitors could develop and commercialize product candidates similar or identical to the product candidates, and our ability to successfully commercialize the product candidates and other product candidates that we may pursue may be impaired.
- The patent protection we obtain for our product candidates and technology may be challenged or not sufficient enough to provide us with any competitive advantage.
- A number of our programs and associated product candidates are heavily dependent on licensed intellectual property. If we were to lose our rights to licensed intellectual property, we may not be able to continue developing or commercializing our product candidates, if approved. If we breach any of the agreements under which we license the use, development and commercialization rights to our product candidates or technology from third parties or, in certain cases, we fail to meet certain development deadlines, we could lose license rights that are important to our business.
- We have never commercialized a product candidate and we may lack the necessary expertise, personnel and resources to successfully commercialize any of our products that receive regulatory approval on our own or together with collaborators.
- Our international operations may expose us to business, regulatory, legal, political, operational, financial, pricing and reimbursement risks associated with doing business across multiple jurisdictions outside of the United States.
- We are an emerging growth company and we cannot be certain if the reduced reporting requirements applicable to emerging growth companies will make our ADSs less attractive to investors.
- We have previously had material weaknesses in our internal control systems over financial reporting, which have been remediated. We may identify new material weaknesses in the future that may cause us to fail to meet our reporting obligations or result in material misstatements in our financial statements. If we fail to remediate any new material weaknesses, we may not be able to report our financial results accurately or to prevent fraud.
- If we fail to develop or maintain an effective system of disclosure controls and internal control over financial reporting, our ability to produce timely and accurate financial statements or comply with applicable regulations could be impaired.
- Holders of ADSs may be subject to limitations on the transfer of their ADSs and the withdrawal of the underlying ordinary shares.
- While we do not believe we were a "passive foreign investment company" ("PFIC") in 2021, there is substantial uncertainty as to whether we are or will be a PFIC in the past or in the future. If we are a PFIC, there could be material adverse U.S. federal income tax consequences to U.S. holders.

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SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This Annual Report on Form 10-K ("10-K"), contains express or implied forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended, that involve substantial risks and uncertainties. In some cases, forward-looking statements may be identified by the words "may," "might," "will," "could," "would," "should," "expect," "intend," "plan," "objective," "anticipate," "believe," "estimate," "predict," "potential," "continue," "ongoing," "aim," "seek," "strive," or the negative of these terms, or other comparable terminology intended to identify statements about the future. These statements involve known and unknown risks, uncertainties and other important factors that may cause our actual results, levels of activity, performance or achievements to be materially different from the information expressed or implied by these forward-looking statements. The forward-looking statements and opinions contained in this 10-K are based upon information available to our management as of the date of this 10-K, and while we believe such information forms a reasonable basis for such statements, such information may be limited or incomplete, and our statements should not be read to indicate that we have conducted an exhaustive inquiry into, or review of, all potentially available relevant information. Forward-looking statements contained in this 10-K include, but are not limited to, statements about:

- the initiation, timing, progress and results (preliminary, interim or final) of our preclinical studies and clinical trials, and our research and development programs;
- our ability to advance our product candidates into, and successfully complete, clinical trials;
- our reliance on the success of our product candidates and our pipeline programs;
- our ability to utilize our screening platform to identify and advance additional product candidates into clinical development;
- our ability to become the partner of choice to attract founder-subject matter experts with high conviction programs;
- the timing or likelihood of regulatory filings and approvals;
- the impact of the ongoing COVID-19 pandemic, including the impact of the delta and other variants, and the impact of the Russia-Ukraine war on our business and operations;
- the commercialization of our product candidates, if approved;
- our ability to develop sales and marketing capabilities;
- the pricing, coverage and reimbursement of our product candidates, if approved;
- the implementation of our business model, strategic plans for our business, product candidates and technology;
- the scope of protection we are able to establish and maintain for intellectual property rights covering our product candidates and technology;
- our ability to operate our business without infringing the intellectual property rights and proprietary technology of third parties;
- cost associated with prosecuting and maintaining our intellectual property and with defending intellectual property infringement, product liability and other claims;
- legal and regulatory development in the United States, the European Union, the United Kingdom and other jurisdictions;
- estimates of our expenses, future revenues, capital requirements and our needs for additional financing;
- the potential benefits of strategic collaboration agreements and our ability to negotiate and enter into strategic arrangements;
- our ability to identify collaboration opportunities and to establish and maintain collaborations;
- our ability to obtain additional funding;
- our ability to fulfill our obligations under the Note Purchase Agreement, as amended, with Oberland Capital;
- the rate and degree of market acceptance of any approved products;
- developments relating to our competitors and our industry, including competing therapies and our ability to respond to such developments;
- our ability to effectively manage our anticipated growth;
- our ability to attract and retain qualified employees and key personnel;
- our expectations regarding the period during which we qualify as an emerging growth company under the JOBS Act;
- statements regarding future revenue, hiring plans, expenses, capital expenditures, capital requirements and share performance;
- our expected use of proceeds of our IPO;
- the future trading price of the ADSs and impact of securities analysts' reports on these prices; and
- other risks and uncertainties, including those listed under the caption "Risk Factors."

You should refer to the section titled “Item 1A. Risk Factors” in this 10-K for a discussion of important factors that may cause our actual results to differ materially from those expressed or implied by our forward-looking statements. As a result of these factors, we cannot be assured that the forward-looking statements in this 10-K will prove to be accurate. Furthermore, if our forward-looking statements prove to be inaccurate, the inaccuracy may be material. In light of the significant uncertainties in these forward-looking statements, these statements should not be regarded as a representation or warranty by us or any other person that we will achieve our objectives and plans in any specified time frame, or at all. We undertake no obligation to publicly update any forward-looking statements, whether as a result of new information, future events or otherwise, except as required by law.

You should read this 10-K and the documents that we reference in this 10-K and have filed as exhibits to this 10-K completely and with the understanding that our actual future results may be materially different from what we expect. We qualify all of our forward-looking statements by these cautionary statements.

PART I.

Item 1. Business

In this Annual Report on Form 10-K, unless otherwise indicated or the context otherwise requires, all references to "we," "our," "us," "Centessa," "the Company," and "our Company" refer to Centessa Pharmaceuticals plc and its consolidated subsidiaries.

Our Vision

We aim to be a Research & Development ("R&D") innovation engine that discovers, develops and ultimately delivers impactful medicines to patients. We seek to pursue the best assets in a capital efficient manner with objective and strategic decision-making to rapidly progress our programs through development. Through our approach, we strive to deliver medicines that can lead to significant impact for patients who are desperately in need of new treatments.

Overview

Centessa Pharmaceuticals plc was formed in October 2020 with the purpose of bringing impactful new medicines to patients by combining the primary strengths of the asset-centric venture capital model with the benefits of diversification and scale typically attributed to traditional large R&D organizations. Medicxi formed Centessa with a view to ultimately acquiring several pre-revenue, development stage biotech companies, each of which was either controlled by and/or invested in by a fund affiliated with Medicxi or Index Ventures. On January 29, 2021, we acquired 11 biotechnology companies as direct subsidiaries (together referred to as the "Centessa Subsidiaries") and simultaneously closed a Series A funding round of $250 million. Prior to the acquisition, our activities were limited mainly to engaging advisors and recruitment efforts. We commenced active operations after the consummation of the acquisitions.

In June 2021, we completed an initial public offering ("IPO") of the ordinary shares through the sale and issuance of 16,500,000 American Depositary Shares ("ADSs"), at an initial price of $20.00 per ADS. Each ADS represents one ordinary share with a nominal value of £0.002 per ordinary share. Following the close of the IPO, the underwriters fully exercised their option to purchase an additional 2,475,000 ADSs at the initial public offering price of $20.00 per ADS.

We operate as a clinical-stage pharmaceutical company with a Research & Development ("R&D") innovation engine that aims to discover, develop and ultimately deliver impactful medicines to patients. Our model seeks to minimize infrastructure investment and fixed costs by incorporating extensive outsourced resources into our research and development model to optimize deployment of funds for discovery and development. We are led by a management team with extensive R&D experience from leading biotech and pharmaceutical companies. Our management team provides direct guidance to rapidly advance our programs from research through all stages of development through the integrated one-team structure of our operating model. The management team is also responsible for judicious capital and resource allocation decisions for discovery and development efforts across the portfolio and aims to expeditiously evaluate and potentially terminate programs when the data do not support advancing a program.

Our programs span discovery-stage to late-stage development and cover a range of high-value indications in rare diseases and immuno-oncology. Our portfolio is dynamic as our management team continuously evaluates the programs. We currently have two programs which have established clinical proof of concept, with registrational trials ongoing for lixivaptan in Autosomal Dominant Polycystic Kidney Disease (ADPKD) and planned for SerpinPC in Hemophilia B this year; four emerging programs with clinical proof of concept anticipated in the next 18 months with LB101 in solid tumors, ZF874 in Alpha-1 Antitrypsin Deficiency (AATD), MGX292 in Pulmonary Arterial Hypertension (PAH), and orexin agonists in Narcolepsy; and several exploratory programs including CBS001 in inflammatory / fibrotic diseases and CBS004 in autoimmune conditions. We aim to pursue programs we believe could be first-in-class / best-in-class in areas of significant unmet need. Where appropriate, we are also pursuing opportunities for agile, lean and potentially rapid development, including orphan drug designation, fast track designation, and other regulatory and development avenues. Based on our internal epidemiological-based market models, we believe each of our current programs, if approved, has the potential to compete in multi-billion dollar markets.

We shared three clinical read-outs in 2021 for our Hemophilia, AATD, and ADPKD programs, and we plan to bring multiple programs into the clinic each year with further clinical read-outs expected across our portfolio. We believe our re-imagined drug discovery approach has the potential to further generate high-quality development candidates for continued expansion of our clinical stage portfolio. As a company focused on development of therapeutics, we intend to pursue a "develop to commercialize" approach for our programs with a relentless focus on efficiently delivering impactful medicines to patients.

Our Operating Model

We have implemented a reimagined R&D model, leveraging the key strengths of the traditional R&D organization and the core tenets of the asset-centric venture capital model, which relies on focused teams pursuing assets against a single target or pathway. We believe that our approach will allow us to benefit from the characteristics of each model, while simultaneously removing the inefficiencies and potential challenges related to each. In particular, the convergence of scale, judicious allocation of capital and resources with a bias toward outsourcing, and singular focus enables our program teams to pursue development plans with an eye toward commercialization while maintaining flexibility to pursue strategic partnerships that leverage third-party expertise and synergies when warranted. Each of our Centessa Subsidiaries is currently maintained as a separate legal entity wholly owned by Centessa and each has global rights to its programs. Each Centessa Subsidiary exists with a clear purpose to address significant unmet patient need in a specific disease area, building on either precedented human activity or human genetics.

All research activities related to each Centessa Subsidiary are conducted through a Research Excellence Hub. Each Research Excellence Hub is dedicated to pursuing pathway and/or disease domain-specific research with the aim of bringing assets through development candidate selection. Each is led by a subject matter expert based on their unique knowledge and expertise and is overseen by our Chief Innovation Officer (CIO). Once a development candidate (DC) is selected, the program is transitioned to a development program team. The integrated one-team development structure brings together cross-functional expertise to drive agile, lean and effective clinical development of the asset and is led by a Global Team Lead from the Centessa Global Development Organization and overseen by our Chief Medical Officer and our Chairman of Development.

The Research Excellence Hub and development program teams are designed to be lean, with limited fixed costs to further enhance the economics of drug development, consistent with the asset-centric philosophy. To accomplish this aim, the teams rely on strategic Contract Research Organization (CRO) and Contract Development and Manufacturing Organization (CDMO) partners and consultants while maintaining a small, agile, and highly experienced core team of drug developers.

Our Management Team

We are led by a management team with extensive R&D experience from leading biotech and pharmaceutical companies. Each member of our management team is a leader in their respective function. The management team is led by our CEO, Saurabh Saha, MD, PhD, who was previously Senior Vice President, R&D, and Global Head of Translational Medicine at Bristol Myers Squibb. Antoine Yver, MD, MSc, Executive Vice President and Chairman of Development, is accountable for Centessa's overall development strategy, including scientific, clinical and regulatory matters. Dr. Yver is one of the world's leading drug developers, playing a pivotal role in the development and approvals of 11 different drugs, including TAGRISSO®, LYNPARZA®, and ENHERTU®. David Grainger, PhD, Chief Innovation Officer, is responsible for the overall management of the scientific and research activities. Dr. Grainger previously co-founded 28 biotechnology companies over the course of his career and was most recently a co-founder and Chief Scientific Advisor at Medicxi. Javad Shahidi, MD, MSc, is Chief Medical Officer, overseeing clinical development teams and responsible for the overall design, delivery and management of clinical development, regulatory and medical affairs. Dr. Shahidi joined from Daiichi Sankyo, Inc., where he was Vice President of Clinical Development and led the development of ENHERTU®. Our Chief Quality Officer, Tia Bush, brings nearly 30 years of biotechnology quality experience from Amgen, where she was the Chief Quality Officer. Thomas Templeman, PhD, Chief Technology Officer, was previously Senior Vice President, Pharmaceutical Operations and Quality at several biotech companies including Nuvation Bio, Axovant Sciences, and Medivation, and served as Vice President of Manufacturing Science and Technology at Hospira. David Chao, PhD, Chief Administrative Officer, was most recently President and Chief Executive Officer of the Stowers Institute for Medical Research and BioMed Valley Discoveries. Iqbal Hussain, LLB, General Counsel, joined Centessa from Reed Smith, LLP, where he was a Partner in the Global Corporate Group and previously served as Legal Director for Mergers and Acquisitions at Johnson & Johnson. Our Chief Financial Officer, Gregory Weinhoff, MD, MBA, was most recently at Arvelle Therapeutics, B.V., which he had co-founded and where he served as Chief Financial and Chief Business Officer. Previously, Dr. Weinhoff served as Chief Financial Officer at Axovant Sciences, Inc. and was the founding CEO of Amicus Therapeutics. Marella Thorell, Chief Accounting Officer, was previously Chief Financial Officer at several biotech companies including Palladio Biosciences and Realm Therapeutics. Josh Hamermesh, MBA, joined Centessa as Senior Vice President, Business Development; he previously served as Chief Business Officer at Gamida Cell, Ltd. and Senior Vice President at Locust Walk Partners.

Our Pipeline

Our programs span discovery-stage to late-stage development and cover a range of high-value indications. We aim to pursue programs we believe could be first-in-class / best-in-class and where there is prior learning in human genetics or precedented human activity for a pathway of interest. We place a premium on learnings from the clinic, whereby a drug has established the relevance of a biological pathway contributing to disease outcome. Our approach is to pursue the best assets in a capital efficient manner and rapidly progress our programs through development, evaluating the unique biological advantage of our product candidates.

We categorize our current programs as registrational, emerging, or exploratory. Our R&D spend is commensurate with these three stages, with the highest spend on the programs that have already established clinical proof of concept. For programs in the earlier stages, we aim to implement capital-efficient plans to reach the next set of catalysts, gating more significant spending until after we obtain clinical proof of concept.

- **Registrational: Programs currently in or expected to enter registrational trials this year**
    - **Lixivaptan in Autosomal Dominant Polycystic Kidney Disease (ADPKD):** Vasopressin V2 receptor small molecule inhibitor with potential to avoid safety issues associated with the only drug approved for the treatment of ADPKD, tolvaptan, which is associated with serious drug induced liver injury (DILI) and in the US is only available under a Risk Evaluation and Mitigation Strategy (REMS) distribution program. Lixivaptan is currently in a Phase 3 registrational trial for the treatment of ADPKD. We anticipate completing enrollment in the second half of 2023, and if results are supportive, plan to submit a New Drug Application (NDA) after completion of the one-year double-blind portion of the study.
    - **SerpinPC in Hemophilia:** Activated protein C (APC) inhibitor for Hemophilia A and Hemophilia B, which has been observed to be well-tolerated in the clinical setting, associated with promising reductions in bleeding rates, and which has PK suitable for infrequent subcutaneous dosing without the need for factor replacement. SerpinPC has human genetic target validation and established proof of concept Phase 2a clinical data. Registrational trials are planned to start for Hemophilia B in 2022, and plans for Hemophilia A are in development.

- **Emerging: Programs / platforms with clinical proof of concept anticipated in the next 18 months**
    - **LB101 and LB201 in Solid Tumors:** LB101, a PD-L1xCD47 LockBody®, is designed to selectively drive potent CD47 effector function activity while avoiding systemic toxicity. LB101 has two anti-CD47 domains blocked by two anti-PD-L1 domains, with proprietary human IgG-derived hinges linking the anti-CD47 and anti-PD-L1 domains. CD47 cell-killing is blocked by the PD-L1 tumor targeting domain until the IgG-derived hinges are naturally degraded in the tumor microenvironment (TME), thus

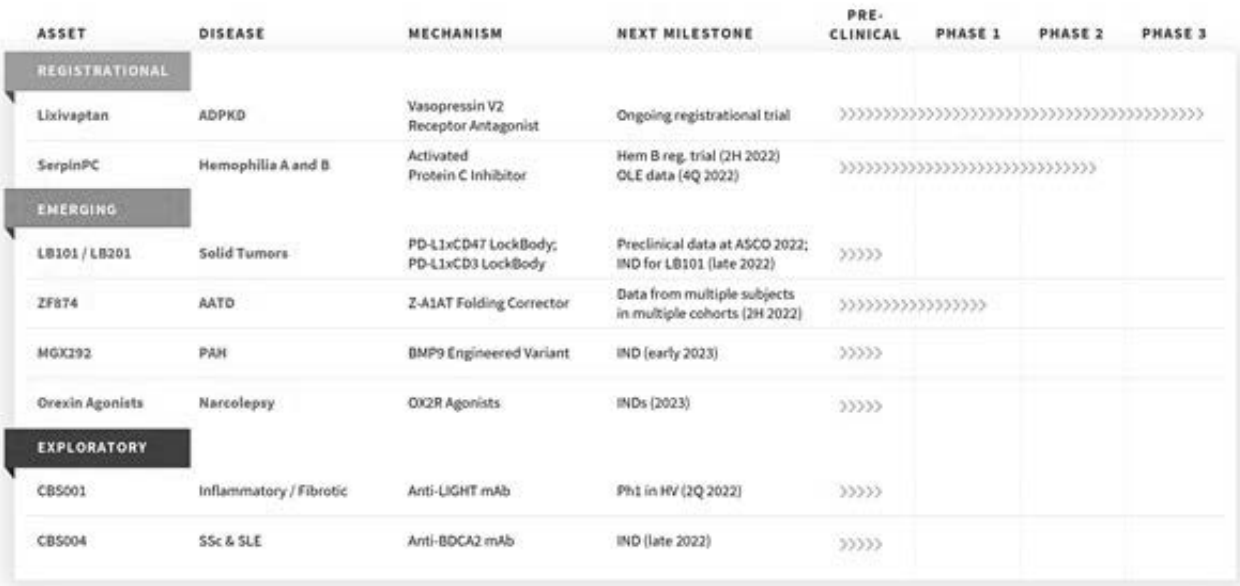
unlocking and activating the CD47 effector function activity in the tumor. We expect to share foundational preclinical data at ASCO 2022, with an investigational new drug application (IND) for LB101 planned for late 2022. We anticipate establishing clinical proof of concept for LB101 in 2023 based on potential response rates in the planned Phase 1 study. LB201, a PD-L1xCD3 LockBody®, is designed to selectively drive potent CD3 effector function activity while avoiding systemic toxicity. IND for LB201 is planned for 2023. LB101 and LB201 are the first two from a platform of LockBody® programs.

- **ZF874 in Alpha-1 Antitrypsin Deficiency (AATD):** Small molecule pharmacological chaperone folding corrector of the Z variant of alpha-1-antitrypsin (Z-A1AT) intended to address the underlying pathology of both lung and liver manifestations of AATD. ZF874 is currently in Phase 1 clinical development, and we expect to share clinical proof of concept data from multiple dose cohorts with PiMZ and PiZZ subjects in the second half of 2022. We also plan to initiate a global Phase 2 study, including a 6-month continuous dosing portion with paired liver biopsy, contingent on completion of the human dose justification work ongoing in the Phase 1 study.
- **MGX292 in Pulmonary Arterial Hypertension (PAH):** Recombinant modified BMP9 replacement protein designed to overcome the deficiency in BMP9 signaling in PAH, directly targeting a central underlying disease mechanism (BMP9/BMPR2/ALK1 signaling pathway genetically altered in PAH). An IND is planned for early 2023, and we anticipate early clinical proof of concept from the first in human study during 2023.
- **OX2R Agonists (Oral and Intranasal) in Narcolepsy Type 1 (NT1):** Selective orexin receptor 2 (OX2R) agonists designed to leverage unique structural insights and to directly target the underlying pathophysiology of orexin neuron loss in NT1. Potential expansion into Narcolepsy Type 2 (NT2), rare hypersomnias, and additional disorders. INDs/CTAs are planned for 2023, and we anticipate early clinical proof of concept to be established in the Phase 1 study in 2023.

- **Exploratory: Programs with potential to become Emerging Programs** (clinical proof of concept beyond 18 months)
  - **CBS001 in inflammatory / fibrotic diseases:** High-affinity anti-LIGHT antibody, which preferentially binds the inflammatory membrane form of LIGHT. We have received authorization from the UK Medicines and Healthcare products Regulatory Agency (MHRA) to start a Phase 1 clinical trial in healthy volunteers (planned to start in the second quarter of 2022).
  - **CBS004 in Systemic Sclerosis (SSc), Systemic Lupus Erythematosus (SLE) and Other Autoimmune Diseases:** Humanized mAb specific to BDCA2, which is expressed exclusively on plasmacytoid dendritic cells (pDCs). An IND is planned for late 2022.

As part of ongoing portfolio management, we continuously review all of our programs with the goal of assembling a pipeline of product candidates with the potential to be first in class / best in class assets. We are not dependent on any one program or therapeutic area within our product portfolio. Our portfolio decisions reflect the responsibility of the management team to expeditiously evaluate and potentially increase resources or suspend development based on whether the product profile or data meet our criteria for further investment. In particular, we apply our criteria to each program individually and evaluate the merits of each program individually and not in comparison to other programs in our pipeline. As a result, we have recently determined to: (1) discontinue the small molecule epidermal growth factor receptor (EGFR) Exon20 insertion mutation inhibitor program and C797S mutation inhibitor program for the treatment of Non-Small Cell Lung Cancer (NSCLC); (2) evaluate strategic options including potential divestment for imgatuzumab, an anti-EGFR mAb; and (3) discontinue internal funding for the lead dual-STAT3/5 degrader program in Acute Myeloid Leukemia (AML).

The below pipeline chart represents our current programs, including the disease area, mechanism of action, next milestone, and stage of development.



Registrational Programs

Lixivaptan in ADPKD

Summary

We are developing lixivaptan, an oral, non-peptide, new chemical agent that is designed to selectively suppress the activity of the hormone vasopressin at the V2 receptor and to deliver a differentiated profile for patients with ADPKD. We are evaluating the potential of lixivaptan to slow the loss in renal function that is typically observed in ADPKD patients while avoiding liver safety issues associated with JYNARQUE®, a form of branded tolvaptan which is the only drug currently approved for ADPKD. We are currently conducting a global Phase 3 registrational clinical trial, designated the ACTION Study, with the first subject dosed on lixivaptan in February 2022. Lixivaptan is from our subsidiary Palladio Biosciences, Inc. (Palladio).

Disease Overview

ADPKD is a hereditary disorder characterized by the formation and enlargement of cysts in the kidney, liver, and other organs. It is the fourth leading cause of kidney failure in the U.S. and one of the most common inherited genetic diseases in humans, occurring equally in women and men, in all races, globally. There are an estimated 140,000 diagnosed ADPKD patients in the U.S.

ADPKD results from loss-of-function mutations in one of two related genes, *PKD1* or *PKD2*, which encode for the gene products Polycystin 1 and Polycystin 2, respectively. These defects disrupt the normal differentiated phenotype of the renal tubular epithelium, leading to increases in intracellular cyclic adenosine monophosphate (cAMP), and resulting in increased cellular proliferation and cyst formation throughout the life of a patient. Progressive enlargement of the kidneys caused by ADPKD may result in severely enlarged and distorted kidneys. Whereas a normal kidney is usually about the size of a human fist and weighs around six ounces, kidneys affected by ADPKD can be as large as a football and may weigh 30 pounds. In ADPKD, cyst growth displaces and destroys normal kidney tissue, leading to a decreased number and function of nephrons. As normally functioning kidney tissue is replaced, the kidney's ability to function decreases. Although compensatory hyperfiltration can maintain kidney function within a normal range for some periods of time, ADPKD patients often experience hypertension, acute and chronic pain, kidney stones, and hematuria as well as cyst and urinary tract infections even when kidney function appears normal. Eventually, the majority of ADPKD patients experience end stage kidney failure and require dialysis or kidney transplantation.

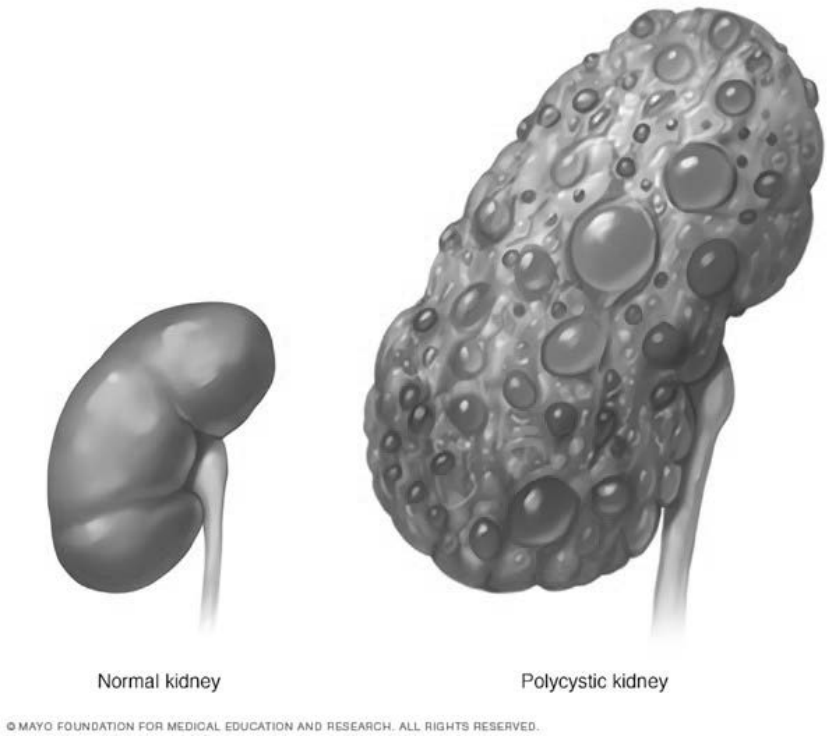


Figure 1: Depiction of a normal kidney on the left as compared to that of a kidney from a PKD patient on the right.

Competition and Market Opportunity

There is no cure for ADPKD. Only one drug, tolvaptan, has been approved for treatment of ADPKD. Tolvaptan, like lixivaptan, is a non-peptide vasopressin V2 receptor antagonist in the drug class of vaptans. Additional treatments for ADPKD patients are intended to manage conditions associated with the disease, such as hypertension, kidney infections, gout, kidney stones and pain.

Tolvaptan was first approved for the treatment of low sodium in the blood (hyponatremia) conditions. It has now also been approved for the treatment of ADPKD in Japan, Canada, Europe, the U.S. and other major markets. It is marketed by Otsuka Pharmaceutical Co., Ltd. (Otsuka) for ADPKD under the tradename of JINARC® in Canada, Europe and other countries. It was approved in the United States in April 2018 for slowing kidney function decline in adults at risk of rapidly progressing ADPKD and is marketed in the U.S. by Otsuka under the tradename of JYNARQUE®. In 2021, U.S. sales of JYNARQUE® totaled approximately $770 million. Approximately 8,000 patients have been treated with JYNARQUE® in the U.S. since its approval. With the latest patent in the Orange Book, the anticipated patent term for JYNARQUE® would expire in April 2030.

However, the use of tolvaptan for the treatment of ADPKD is associated with serious drug induced liver injury (DILI). Consequently, the labeling for tolvaptan for ADPKD carries a prominent DILI warning with requirements for extensive liver function monitoring while patients take the drug. The U.S. Food and Drug Administration (FDA) also mandated a REMS program as a condition of approval for tolvaptan for ADPKD. A REMS program is a drug safety program that the FDA can require for certain medications with serious safety concerns. JYNARQUE® prescribers must enroll and be certified in the REMS program. Patients must also enroll and are required to submit frequent blood tests to monitor for liver toxicity.

Other potential treatments for ADPKD are being pursued by multiple companies. Reata Pharmaceuticals, Inc. (Reata) is pursuing bardoxolone, an oral once-daily activator of Nrf2, and is conducting Phase 3 trials in ADPKD. Reata has made recent changes to its protocol following their Type B meeting with the FDA, including increasing the enrollment target and confirming the primary endpoint for approval will be measured after 2 years on drug. Separately, Reata recently received a Complete Response Letter ("CRL") from the FDA for bardoxolone in Alport Syndrome on the basis that the agency does not believe the data demonstrate bardoxolone is effective in slowing loss of kidney function and reducing the

risk of progression to kidney failure. The CRL follows a negative vote from the FDA Cardiovascular and Renal Drugs Advisory Committee. There are several other investigational products in earlier stages of clinical development, including GLPG2737, a Cystic Fibrosis Transmembrane Conductance Regulator (CFTR) inhibitor being investigated by Galapagos NV (Galapagos) in Phase 2 clinical development and RGLS4326, an inhibitor of miR-17 being investigated by Regulus Therapeutics Inc. (Regulus) in Phase 1 clinical development, as well as preclinical programs including AT-20494, a selective rapamycin analog mTORC1 inhibitor being investigated by Janssen Pharmaceuticals Inc. (Janssen). Sanofi S.A. (Sanofi) announced in June 2021 that it was discontinuing its program to evaluate venglustat, an inhibitor of glucosylceramide synthase (GCS), in ADPKD after the pivotal Phase 2/3 study did not meet futility criteria.

Market research conducted in the U.S. suggests that less than half of patients who are considered good clinical candidates for tolvaptan are actually prescribed the drug. Liver toxicity is cited as a major deterrent to using tolvaptan for many patients. The REMS program brings additional burden to both physicians and patients, which has also impacted market adoption of JYNARQUE®. We believe that if approved, lixivaptan has the potential to address unmet need for patients currently on tolvaptan, patients who may have discontinued tolvaptan, and treatment-naïve patients.

Our Product Candidate

We believe that lixivaptan may offer similar therapeutic activity in treating ADPKD as compared to tolvaptan while avoiding the DILI associated with tolvaptan use in this patient population. Because vasopressin is the principal agonist pathway leading to the formation of cAMP in kidney tubule cells, therapeutic interventions aimed at counterbalancing the effect of vasopressin and/or normalizing intracellular levels of cAMP were hypothesized as possible treatments to delay disease progression in ADPKD, as supported by animal models and preclinical work. Definitive evidence in favor of the utility of vasopressin antagonism as a therapeutic approach for ADPKD is derived from clinical and therapeutic experience with tolvaptan.

Lixivaptan's development program for ADPKD builds on a historical, extensive development program conducted by our licensors in investigating lixivaptan for the treatment of hyponatremia. This work included 36 completed clinical studies in which more than 1,600 subjects were dosed with lixivaptan, the results from which we believe support lixivaptan's activity on key measures believed to be important for ADPKD. In addition, upon systematic review of the existing clinical safety and tolerability data by the company, we did not identify any signal of potential hepatotoxicity in the prior development program for hyponatremia, albeit at a different dose and regimen and with a different underlying pathology.

Prior to administering lixivaptan to ADPKD patients, we studied lixivaptan's liver safety profile, as compared to tolvaptan, by utilizing DILIsym, a state-of-the art, predictive, quantitative systems toxicology modeling tool developed by the DILIsym Consortium in collaboration with the U.S. FDA and industry partners. DILIsym representations predicted that lixivaptan is not likely to cause DILI and may be better tolerated than tolvaptan with respect to the mechanisms of liver toxicity currently represented in DILIsym. The results of this work were published in a peer-reviewed journal.

We completed a Phase 2 clinical trial, designated the ELiSA Study (Evaluation of Lixivaptan in Subjects with ADPKD). This study showed that lixivaptan has potent vasopressin V2 receptor antagonist activity in patients with ADPKD with varying degrees of kidney function (chronic kidney disease stages CKD1 through CKD3). The study also defined the dose range for further Phase 3 studies. Lixivaptan was well tolerated at the doses given, with adverse events (AEs) consistent with previous studies in non-ADPKD patients. No liver toxicity signals were noted.

We have also completed a clinical study in a single subject with intractable pain due to ADPKD who was required to discontinue tolvaptan treatment due to clinically significant abnormalities in serum alanine aminotransferase (ALT), a sign of liver toxicity, on each of three sequential attempts to initiate treatment with tolvaptan. The patient was subsequently treated with lixivaptan for more than 14 months with no abnormalities in ALT or other liver chemistry tests.

We are currently conducting an open-label, non-registrational repeat-dose study, designated the ALERT Study, which is designed to assess hepatic and non-hepatic safety of lixivaptan in patients who previously experienced abnormal liver chemistry test results that met the criteria for DILI while undergoing treatment with tolvaptan and who were permanently discontinued from tolvaptan for that reason. Initial safety data on the first four subjects in the ALERT Study showed that they successfully titrated to the maintenance dose of lixivaptan and no subjects met the pre-specified stopping criteria.

We are also currently conducting a global, registrational Phase 3 study, designated the ACTION Study, which is designed to evaluate the efficacy and safety of lixivaptan in subjects with ADPKD. The first subject in this study was dosed on lixivaptan in February 2022.

Clinical Data

In addition to our clinical trial data to-date in ADPKD, discussed below, lixivaptan has shown activity in preclinical models in established models of PKD. Historically, lixivaptan has also been investigated in over 30 additional trials by our licensors in hyponatremia.

Completed Trials

The ELiSA Study. PA-102—A Phase 2, open-label, multi-center study to evaluate the safety, pharmacokinetics and pharmacodynamics of lixivaptan in subjects with autosomal dominant polycystic kidney disease.

The ELiSA study was a Phase 2, open-label, parallel-group, multiple dose, multi-center study conducted to directly characterize the safety and tolerability, pharmacokinetics, and pharmacodynamics (pharmacologic response) of lixivaptan in ADPKD subjects with different degrees of renal function impairment. The study used administration of twice daily oral doses of 50 mg and 200 mg for seven days in subjects with both ADPKD and chronic kidney disease (CKD) stage 1, stage 2 or stage 3. Chronic kidney disease is categorized into five stages based on how well the kidneys can filter waste and extra fluid out of the blood, corresponding to mild damage in stage 1 to complete kidney failure in stage 5. These safety, PK and PD assessments are being used to guide appropriate lixivaptan dosing recommendations for subjects with ADPKD and mild or moderate CKD in future clinical studies.

Study PA-102 enrolled a total of 31 subjects diagnosed with ADPKD who were assigned to four cohorts based on baseline renal function and treated with one of two doses of lixivaptan for seven days, twice daily (BID), as illustrated in Figure 2 below:

Cohort	CKD stage	Dose	N
1	CKD1 or CKD2	200 mg BID	9 subjects
2	CKD3	200 mg BID	8 subjects
3	CKD1 or CKD2	50 mg BID	7 subjects
4	CKD3	50 mg BID	7 subjects

Figure 2: PA-102 dosing and CKD stage cohorts.

Subjects were confined to the clinical research unit (CRU) during the critical periods of data collection at the initiation and completion of dosing. Safety assessments included clinical laboratory findings, 12-lead electrocardiography (ECGs), vital signs, physical examination findings, adverse event monitoring, and a tolerability questionnaire. PD assessments included concentration of dissolved chemicals in the urine (osmolality) and urine output, total kidney volume (TKV) and liver volume (LV) by magnetic resonance imaging (MRI), plasma copeptin, and serum creatinine to calculate estimated glomerular filtration rate (eGFR). PK assessments included determination of lixivaptan and metabolite concentrations over the PK sampling period (0-14 hours). The design of PA-102 is summarized in the graphic below.

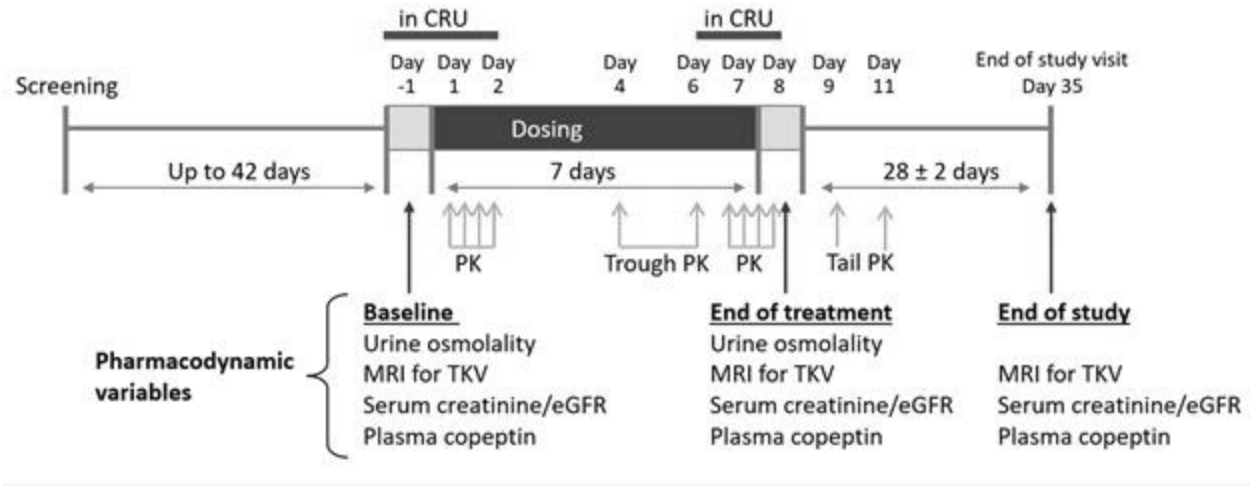


Figure 3: Schematic representation of the ELiSA Study, PA-102 trial design.

Lixivaptan was well-tolerated across all cohorts, with all 31 subjects having completed the study. There were no deaths, serious AEs, or treatment-emergent adverse events (TEAEs), leading to discontinuation from the study. Fifteen subjects experienced at least one TEAE, which were mild or moderate in severity. The most common AEs observed were dry mouth, headache, nausea, diarrhea, flank pain, paresthesia, syncope and thirst. In addition, no abnormal changes in additional measured biomarkers such as ALT were observed.

In addition to the assessment of AEs, all subjects were asked to complete a tolerability questionnaire after the first and seventh days of dosing with lixivaptan. At the final assessment, 81% of the subjects indicated they could tolerate continuing on the drug for at least the next 12 months. All subjects indicated they would be prepared to recommend lixivaptan to another patient.

The PK profile of lixivaptan and its metabolites in ADPKD patients in study PA-102 was clinically equivalent to the PK profile in healthy volunteers. The PK profile of 50 mg and 200 mg BID doses of lixivaptan on day seven is shown in the figure below.

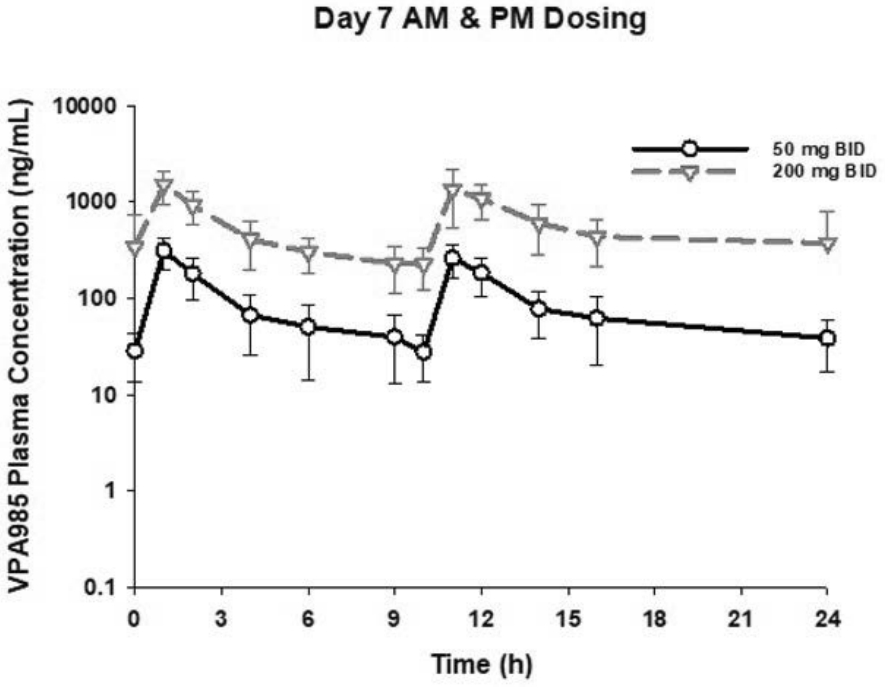


Figure 4: Mean (± standard deviation) plasma concentrations of lixivaptan (VPA-985) observed on day 7 after twice-daily oral doses of 200 mg and 50 mg in ADPKD subjects in the ELiSA Study, PA-102.

Importantly, we observed a dose-dependent reduction in mean urine osmolality following lixivaptan administration, which we believe indicated blockade of the vasopressin V2 receptor over 24 hours on a twice a day dosing scheme at 200 mg BID.

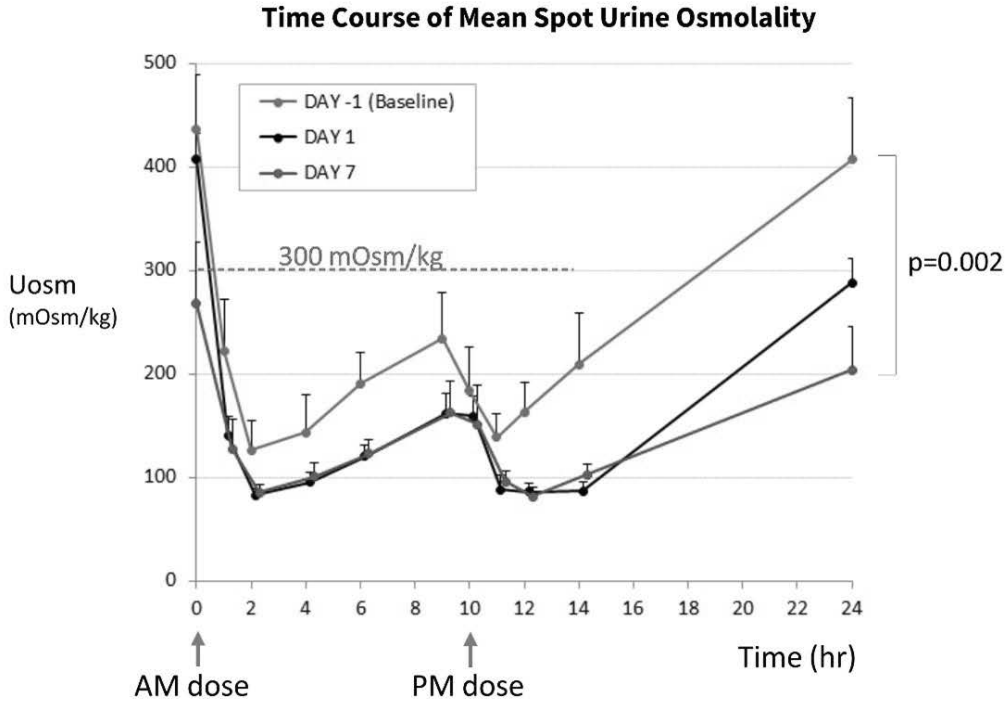


Figure 5: Time Course of Mean Spot Urine Osmolality.

The percentage of ADPKD subjects achieving adequate suppression of urine osmolality after seven days of dosing with lixivaptan in the PA-102 study compared to published results for tolvaptan are shown in the figure below. No head-to-head studies of lixivaptan and tolvaptan have been conducted.

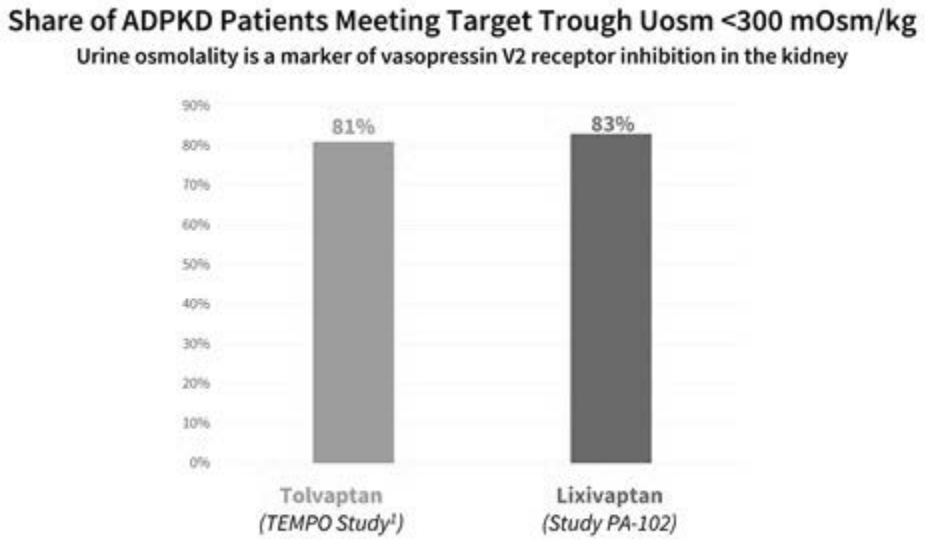


Figure 6: Percentage of subjects meeting the trough urine osmolality (Uosm) suppression target criterion (Uosm <300 mOsm/kg) at steady state on tolvaptan (ADPKD subjects in TEMPO trial) and lixivaptan (ADPKD subjects at multiple doses in the ELiSA Study, PA-102).

Based on these results, we believe the minimum efficacious daily dose is likely to be 100 mg BID with a maximum dose of 200 mg BID. The 50 mg BID dose is considered a starting dose to acquaint subjects with the aquaretic effects of the drug. Other changes in PD parameters for serum sodium, eGFR and plasma copeptin were consistent with the expected activity of the vaptan class of drugs in ADPKD patients.

In conclusion, we believe results from PA-102 suggest that lixivaptan may be a potent vasopressin V2 receptor antagonist with meaningful activity on urine osmolality, serum sodium, eGFR and plasma copeptin in subjects with ADPKD, and with a good tolerability profile and AEs that are consistent with previous studies.

PA-103: An Expanded Access Study of Lixivaptan in a Single Subject with Intractable Pain Due to Polycystic Kidney Disease

Study PA-103 was an open-label, single-arm, repeat dose expanded access study in a single subject with ADPKD who had been incapacitated by ADPKD-related abdominal pain. Pain is a frequent complication of ADPKD and clinical data with tolvaptan suggest that vaptan therapy may help alleviate pain. In this study, increasing doses of lixivaptan were provided to improve the marked abdominal pain that the subject was experiencing. Doses up to 150 mg in the morning and 100 mg in the evening were allowed during the titration period and subsequently were allowed to increase to 200 mg in the morning and 100 mg in the evening in the maintenance period. Liver chemistry tests, scales for quality of life and pain and AEs were monitored frequently during both the titration and maintenance periods.

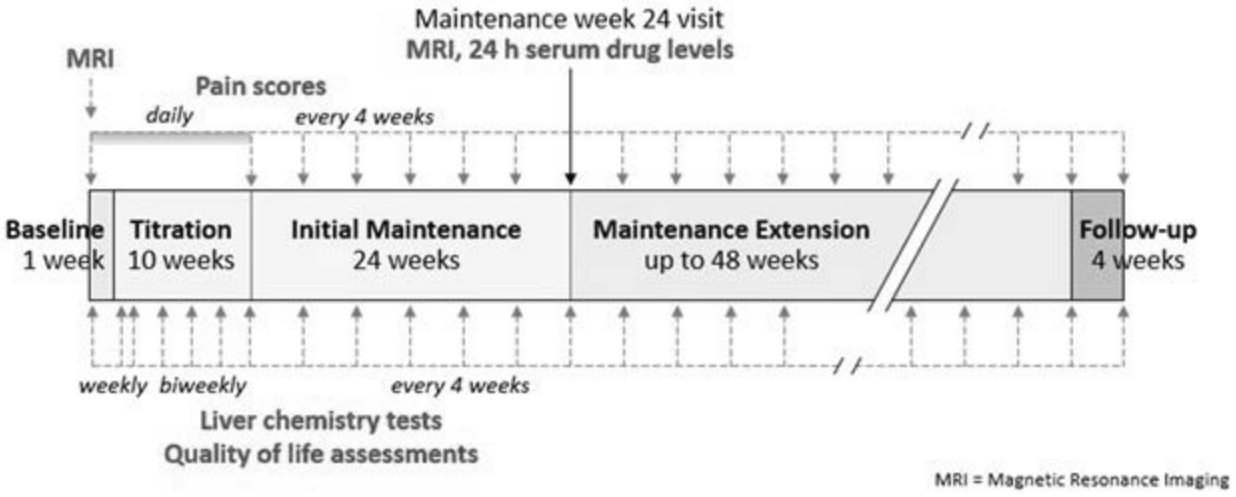


Figure 7: Schematic representation of PA-103 Expanded Access Study trial design.

This subject was previously treated for the pain with tolvaptan but was unable to continue with the drug because of DILI, which manifested as elevated serum ALT levels that occurred on three separate occasions while on tolvaptan. The subject's previous dosing and ALT levels on tolvaptan are shown in the chart below.

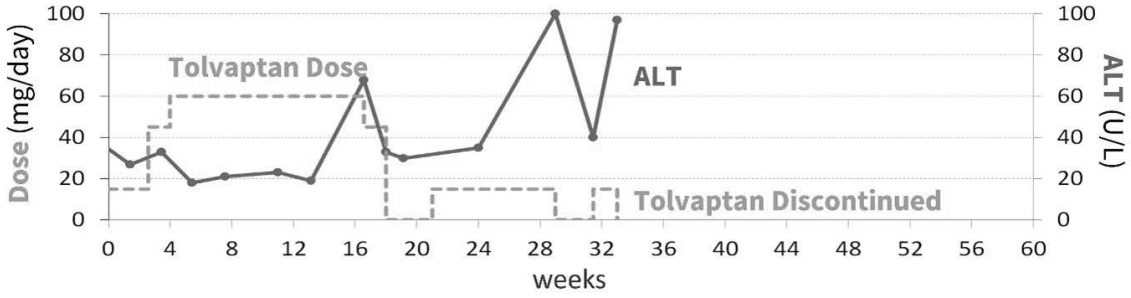


Figure 8: Serum ALT levels and tolvaptan daily dose over time in an ADPKD subject with severe abdominal pain treated with tolvaptan in 2017.

The subject started dosing with lixivaptan in May 2019. The dosing record and ALT levels through study completion in July 2020 are shown in the chart below.

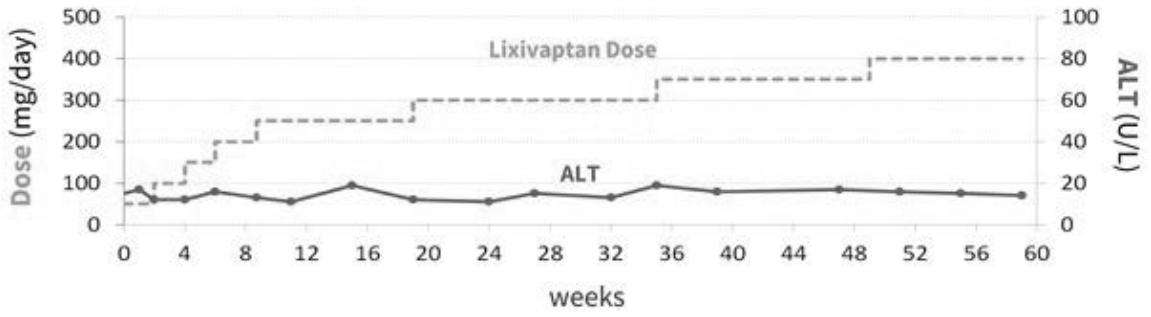


Figure 9: Serum ALT levels and lixivaptan daily dose over time in an ADPKD subject with severe abdominal pain treated with lixivaptan starting in 2019.

Lixivaptan was well-tolerated by the subject in the study. The only AE reported determined to be definitely related to the study drug was increased urine output. Importantly, the subject completed 415 days of treatment with lixivaptan without any evidence of liver injury. All liver chemistry tests were normal while the subject had been receiving lixivaptan.

The subject's pain and quality of life modestly and mostly transiently improved while on lixivaptan therapy, but because of continued discomfort the subject elected to discontinue lixivaptan in order to pursue more aggressive pain management treatments.

While we believe the encouraging results from this study support the differentiated profile of lixivaptan in ADPKD, the study enrolled only a single patient. As a result, we are continuing to investigate lixivaptan in trials with larger patient populations to generate data to support further development of this candidate.

Ongoing Trials and Development Plan

ACTION Study

We are currently conducting a global, registrational Phase 3 study, designated the ACTION Study, which is designed to evaluate the efficacy and safety of lixivaptan that has been titrated to a maximum tolerated dose between 100-200 mg BID in subjects with ADPKD and a Mayo Clinic MRI imaging classification of 1C, 1D, or 1E and an eGFR ≥25 and ≤90 mL/min/1.73m^2. The first subject was dosed on lixivaptan in February 2022. The ACTION Study, PA-ADPKD 301, is a two-arm trial consisting of a double-blind, placebo-controlled, randomized phase (Part 1) followed by a single-arm open-label phase (Part 2).

In Part 1, all subjects will receive placebo and all subjects will receive lixivaptan to establish dosing. Up to 1,350 subjects will be randomized 2:1 to receive lixivaptan or placebo. After 52 weeks of randomized treatment, the administration of study drug will be paused, and final eGFR assessments for Part 1 will be obtained during three follow-up visits starting over a period of 28 days.

The primary analysis of the ACTION Study will be performed at the end of Part 1 of the trial to assess lixivaptan in slowing the decline in renal function as measured at 52 weeks by the difference in eGFR between the lixivaptan-treated and placebo-treated subjects.

All subjects completing Part 1 are expected to continue into Part 2 of the study and be treated with the active drug, lixivaptan, for an additional 54-56 weeks. At the end of that time, study drug will be discontinued, and final eGFR assessments for Part 2 will be obtained during three follow-up visits starting over a period of 28 days. The design of the trial is summarized in the graphic below. Both parts of the study will contribute to further evaluating the safety profile of lixivaptan. An independent data monitoring committee will periodically review all safety data, including the liver chemistry data for all subjects, throughout the study.

Prior to the Russia-Ukraine war, we had planned to utilize clinical trial sites in Russia and Ukraine as part of the ACTION Study. We have now determined not to proceed with clinical sites in these countries and are in the process of identifying alternative sites to replace the sites previously identified in Russia and Ukraine. We have not yet determined the potential impact, if any, of these planned site changes on our enrollment timelines, and for now still anticipate completing enrollment in the second half of 2023. If results are supportive, we plan to submit a New Drug Application (NDA) to the FDA after completion of the one-year double-blind portion of the study (Part 1).

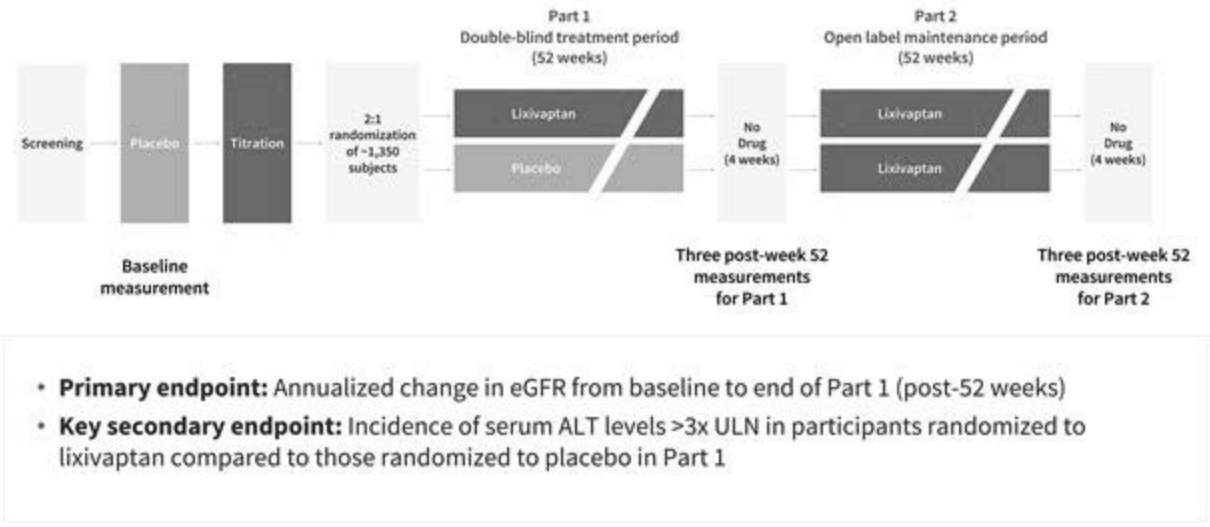


Figure 10: Schematic representation of the ACTION Study, PA-ADPKD-301 trial design.

ALERT Study

The ALERT Study, PA-ADPKD-303, is an open-label, non-registrational repeat-dose study designed to assess hepatic and non-hepatic safety of lixivaptan in patients who previously experienced abnormal liver chemistry test results that met the criteria for DILI while undergoing treatment with tolvaptan and who were permanently discontinued from tolvaptan for that reason. Subjects in the ALERT Study undergo up to 8 weeks of screening followed by a three-week baseline measurement period and then a three- to six-week titration phase with lixivaptan, with weekly liver chemistry test monitoring during the baseline and titration phases. During the maintenance phase, liver chemistry tests are obtained every four weeks. The primary outcome measure in the study is the proportion of subjects who develop alanine aminotransferase (ALT) levels >3x upper limit of normal (ULN) adjudicated to be related to lixivaptan resulting in discontinuation of the study drug. The design of the ALERT Study is summarized in the graphic below.

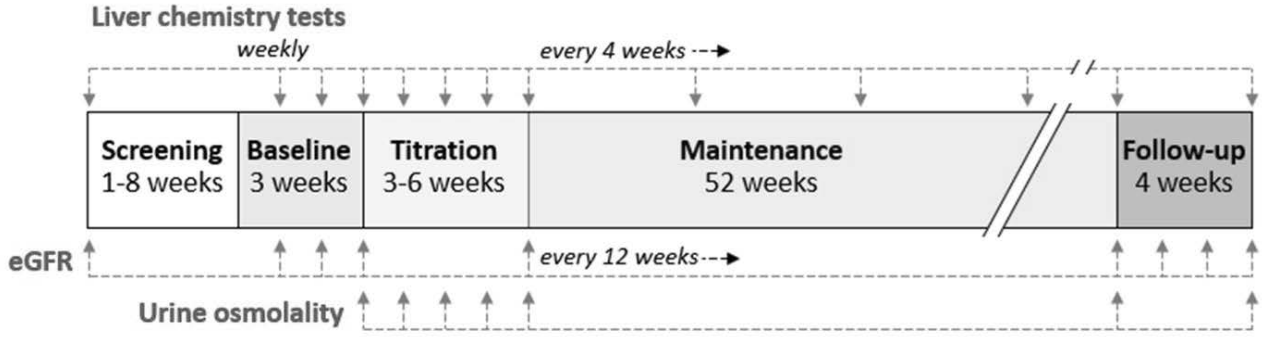


Figure 11: Schematic representation of the ALERT Study, PA-ADPKD-303 trial design.

The initial four subjects enrolled in the Study had previously had cases of DILI while being treated with tolvaptan for ADPKD and had ALT elevations that peaked between 1.8x and 3.5x ULN and did not return to below ULN until 23 to 140 days after tolvaptan use was discontinued. Each of these subjects was successfully titrated to a maintenance dose of lixivaptan of either 100 mg BID (one subject) or 200 mg BID (three subjects) and entered the maintenance phase of the study.

As of the data cutoff on December 3, 2021, three out of four subjects remained on lixivaptan with the longest treatment duration being 366 days, and the remaining subjects at 174 days and 172 days on treatment. One subject successfully titrated to 200 mg BID lixivaptan but withdrew consent after 93 days of dosing. No subjects had clinically meaningful ALT elevations attributed to lixivaptan and no subjects met the pre-specified stopping criteria of an ALT level >3x ULN.

The ALERT Study continues to enroll, and there is an ALERT Extension Study for subjects who continue on treatment after 52 weeks. We do not currently anticipate releasing additional data from the ALERT Study until it is completed and the results can be presented in a scientific forum.

Product Exclusivity

Lixivaptan is a new chemical entity (NCE) that has never been approved or launched for any indication anywhere in the world. While the composition of matter patent for lixivaptan has expired, we are pursuing, through a Patent Cooperation Treaty (PCT) patent application, worldwide patents for polycystic disease indications (including ADPKD), method of use, formulations, and dosage regimens. On February 8, 2022, the U.S. Patent and Trademark Office issued a patent entitled "Formulations of Lixivaptan for the Treatment of Polycystic Disease," which has claims drawn to using a divided dose regimen of lixivaptan in treating ADPKD. The patent term expires June 8, 2038, before consideration of any applicable patent term extensions or adjustments. See "—Intellectual Property and License Agreements." Commercial exclusivity of lixivaptan for the treatment of ADPKD is expected through a combination of existing and additional patent filings, patent term extension, as available, and regulatory and data exclusivity provisions of various countries. Time periods for data exclusivity vary by region, with U.S. NCE exclusivity lasting for five years and the EU generally providing ten years of exclusivity. In addition, the FDA has granted orphan drug designation for lixivaptan for ADPKD. This designation is designed to provide eligibility for certain benefits and confers seven years of market exclusivity if the product receives the first FDA approval for that drug for the disease for which it has such designation.

SerpinPC in Hemophilia A and B

Summary

We are developing SerpinPC for the treatment of Hemophilia A (HA) and Hemophilia B (HB). Hemophilia is a rare bleeding disorder that is caused by a deficiency of thrombin generation upon vascular damage. SerpinPC, a biologic of the serpin family of proteins, is designed to allow more thrombin to be generated by inhibiting Activated Protein C (APC). Our approach is to rebalance coagulation in hemophilia by decreasing a single anticoagulant force. We believe SerpinPC has the potential to treat all types of hemophilia regardless of severity or inhibitor status and may also prevent bleeding associated with other bleeding disorders. We have completed Phase 2a studies in HA and HB subjects and are currently preparing for registrational trials. We have recently completed pre-IND interactions with the FDA. The FDA considered these to be very consistent with an end of Phase 2 meeting, and based on the FDA feedback, we are proceeding with a streamlined, integrated development plan with fewer than 200 total subjects. If results based on this plan are positive, we intend to seek marketing approval in adults and adolescents with Hemophilia B, with and without inhibitors, as the initial indication. As we are preparing to enter registrational trials sooner than previously anticipated, we are working with the FDA on our plans to accelerate product process development and qualification activities. In parallel, we are working on a registrational plan for HA and are actively engaging other health authorities around the world to discuss our regulatory plans outside of the US. SerpinPC is from our subsidiary ApcinteX Limited (ApcinteX).

Disease Overview

HA and HB are X-linked genetic disorders affecting one in 5,000 and one in 20,000 live male births, respectively, resulting in spontaneous internal bleeding that can be life-threatening. More than 70% of bleeds occur into joints (hemarthrosis) causing chronic joint damage (arthropathy) with musculoskeletal destruction. Estimates of the global prevalence of HA and HB vary between 400,000 and 450,000. The World Federation of Hemophilia identified 241,535 registered persons with hemophilia in its 2020 annual report. In the U.S., the report identified approximately 15,000 persons with hemophilia; however, estimated prevalence rates suggest there are over 25,000 persons with hemophilia. Approximately 75% are persons with HA and 25% are persons with HB. The report identified approximately 31,000

persons with hemophilia in the five major European markets (defined as France, Germany, Italy, Spain and the UK). Approximately 80-85% are persons with HA, and the remainder are persons with HB. Estimates of the prevalence of hemophilia in China is approximately 18,000. In India, approximately 23,000 persons are known to have hemophilia, but it is thought that 80% of cases are unknown. There are similarly large populations of persons with hemophilia in South America.

The bleeding associated with these disorders is the result of a defect or deficiency in factor (f)VIII (in the case of HA) or fIX (in the case of HB), the two components of the intrinsic tenase complex. Normal blood coagulation (hemostasis) is a crucial part of the physiological response to tissue damage. When blood components come into contact with extravascular cells and proteins, platelets accumulate and ultimately lead to the formation of thrombin, the effector enzyme of blood coagulation. Prothrombinase activity is required for the rapid, localized production of thrombin needed for adequate blood clotting. Prothrombinase is continuously degraded by APC, which is present in the circulation at low concentrations. In the setting of deficient intrinsic tenase activity (hemophilia), the natural anticoagulant activity of the circulating APC results in insufficient prothrombinase activity for normal blood clotting.

Hemophilia is characterized as severe, moderate and mild, corresponding to <1%, 1% to 5% and >5% factor activity, respectively. Bleeding often becomes noticeable after a child becomes mobile. Hemarthrosis manifests as swelling and pain in the joints, along with decreased range of motion, most commonly affecting the knees, ankles and elbows. Other common manifestations include bruising, which can be spontaneous or occur after minor trauma, gum bleeding and nose bleeds. Persons with severe hemophilia often suffer spontaneous joint bleeds between 20 and 50 times a year. Spontaneous bleeding is less frequent in persons with moderate hemophilia, but in many individuals this condition is still problematic because only two or three bleeds into a joint are sufficient to cause permanent joint damage, and because the frequency of bleeds does not warrant the treatment burden of regular intravenous (IV) prophylactic treatment with replacement factor.

Competition and Market Opportunity

The global market for hemophilia is estimated at over $12 billion as of 2021. Only 20% of persons with hemophilia globally are believed to have access to adequate therapy.

The standard treatment for hemophilia consists of replacing the missing or defective fVIII or fIX by intravenous infusion of partially purified plasma-derived or recombinant fVIII or fIX protein, known as factor concentrate. Factor concentrate is administered either when bleeding occurs, known as on-demand therapy, or regularly to prevent bleeding, known as prophylaxis. Prophylaxis with standard factor concentrates requires intravenous infusion every second or third day in order to reduce annualized bleeding rates (ABR) to single figures. Less frequent intravenous infusion is required with recently approved extended half-life products. Emicizumab (marketed as HEMLIBRA® by Roche) is a synthetic fVIII mimetic replacement therapy that is changing the treatment paradigm in HA. Emicizumab's main benefit is as a substitute for factor VIII in persons with HA with fVIII inhibitors (high-titer antibodies against fVIII), and as an infrequent subcutaneously administered prophylactic in HA without inhibitors. Emicizumab has no activity in HB.

Because the replacement factor is effectively a foreign protein treatment, it is often associated with the formation of inhibitory antibodies which requires the use of a different class of therapeutics called bypass agents. Bypass agents increase thrombin generation through mechanisms independent of the intrinsic tenase complex. The most commonly used bypass agents are recombinant fVIIa and FEIBA. However, the use of these agents is limited by their short half-lives and result in variable responses in patients. They are also less effective than replacement therapy before inhibitors were developed and are rarely used prophylactically.

All approved agents for the treatment of hemophilia improve thrombin generation by bolstering the levels of procoagulant factors. An alternative approach is to reduce the efficiency of natural anticoagulant mechanisms. These include inhibition of Tissue Factor Pathway Inhibitor (TFPI) with antibodies such as marstacimab being investigated by Pfizer, Inc. (Pfizer) and concizumab being investigated by Novo Nordisk A/S (Novo Nordisk) both in Phase 3 clinical development, and knocking down antithrombin levels with an RNA interference such as fitusiran, also in Phase 3 clinical development, being investigated by Sanofi. In addition to these approaches, gene therapies for HA and HB are being developed including several in Phase 3 clinical development: roctavian being investigated by BioMarin Pharmaceutical Inc. (BioMarin) and giroctocogene fitelparvovec (SB-525) being investigated by Pfizer and Sangamo Therapeutics, Inc. (Sangamo) in HA and EtranaDez being investigated by CSL Behring and UniQure and fidanacogene elaparvovec (SPK-9001) being investigated by Pfizer and Spark Therapeutics in HB. Although gene therapies could be a significant development for patients, they face uncertainty regarding safety, durability and cost and are specific to either HA and HB.

Despite advances in hemophilia treatment, there remains a considerable unmet need in both HA and HB:

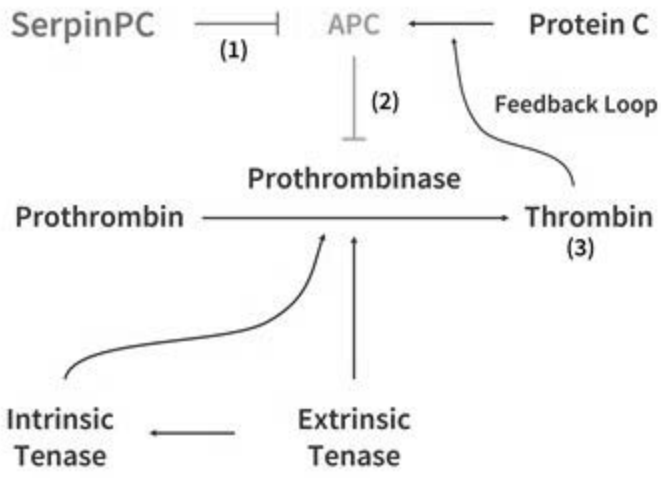
- Factor concentrate therapies require intravenous administration making prophylaxis challenging;
- Up to 30% of persons with HA and 3% of persons with HB develop inhibitory antibodies to factor concentrates, which limits effectiveness of treatment with factor concentrates;
- The non-factor replacement therapies, both approved and in development, are associated with the risk of thrombosis; and
- The majority of persons with hemophilia have no or limited access to prophylactic treatment to prevent bleeding.

We believe that if approved, SerpinPC has the potential to address unmet need for existing and newly diagnosed patients with hemophilia. Although our development plan will include both HA and HB subjects, the initial focus of our registration efforts will be HB, with and without inhibitors, given the higher unmet need and market opportunity in this patient population, who currently do not have alternatives to intravenous factor concentrate.

Our Product Candidate

The protein C (PC) pathway is essential for regulating thrombin generation to avoid excessive blood coagulation. Severe PC deficiency (<5% of normal protein levels) results in widespread thrombosis, called purpura fulminans. PC is the precursor of APC, and is converted to APC when excess thrombin is generated. APC destroys the prothrombinase and intrinsic tenase complexes by cleavage of fVa and fVIIIa, respectively. The fV Leiden gene mutation present in 3% of the caucasian population causes partial resistance of prothrombinase to APC, and is sufficient to reduce bleeding in persons with severe hemophilia who coinherit the relatively common fV Leiden mutation. This was the genetic human proof-of-concept supporting APC inhibition as a treatment for persons with hemophilia.

We believe that the PC system is particularly attractive because partial APC resistance conferred by coinheritance of fV Leiden provides an early proof-of-concept in humans. The mode of action (MOA) of SerpinPC is to reduce levels of circulating APC, thereby prolonging activity of prothrombinase formed during the initiation stage of hemostasis and directly increasing the amount of thrombin generated at the site of tissue damage.



SerpinPC reduces levels of circulating APC (1), thereby prolonging activity of prothrombinase (2) and directly increasing the amount of thrombin (3) at the site of tissue damage

Figure 12: Schematic of the MOA for SerpinPC.

As depicted in Figure 12, thrombin is the effector enzyme in blood coagulation, and is produced by an enzyme complex known as prothrombinase, composed of fXa and fVa. At the initiation stage of blood coagulation, the fXa is produced by the extrinsic tenase complex while the fVa comes from platelets. This 'early prothrombinase' formation is preserved in hemophilia. However, early prothrombinase is inactivated by APC in the blood, so insufficient thrombin is produced to form a stable hemostatic clot, resulting in continued bleeding, unless more prothrombinase can be formed with

the help of the intrinsic tenase complex. The two components of the intrinsic tenase complex are missing in HA and HB. SerpinPC treatment is designed to reduce the levels of APC so that the early prothrombinase has time to produce enough thrombin to form a stable hemostatic clot, thereby preventing excessive blood loss. This expected MOA has a finite and maximal effect when all circulating APC is inhibited by SerpinPC.

SerpinPC is a variant of the serpin alpha-1-antitrypsin, modified to be a specific inhibitor of APC. We were able to convert A1AT into a specific inhibitor of APC by mutating 3 residues in the reactive center loop of the molecule. The serpin mechanism traps the protease during cleavage of the reactive center loop as a covalent complex, and therefore has an absolute requirement that the protease is active, i.e., not the inactive zymogen. For this reason, SerpinPC is designed to have complete specificity for APC over PC, and therefore is not expected to deplete the circulating concentration of PC. Consequently, when conditions favor APC generation (i.e., excessive thrombin generation) PC is available for conversion to APC to effect its anti-inflammatory and anti-thrombotic functions. Because SerpinPC is a relatively slow inhibitor of APC (second-order rate constant of 15,000 $M^{-1}s^{-1}$) it does not rapidly neutralize newly formed APC, preserving these functions at clinically-relevant doses. At the Cmax for the highest clinical dose, it takes 10 minutes to inhibit half of the newly formed APC, sufficient time to effect its signaling and antithrombic functions. However, the covalent nature of the inhibitory mechanism enables low concentrations of SerpinPC in the blood to 'mop up' APC with time. In preclinical studies, it was demonstrated that normalization of bleeding in hemophilia mouse models required the lowering of the circulating APC levels and was not related to the SerpinPC exposure at the time of challenge. SerpinPC has favorable subcutaneous bioavailability, tolerability profile and PK potentially suitable for monthly dosing.

In the Phase 2a part of AP-0101, the six-month repeat dose portion of the ongoing first-in-human study evaluating SerpinPC in severe HA and HB subjects described below, SerpinPC was observed to be well-tolerated. There was no reported sustained elevation in D-dimer, a sensitive measure of excess thrombin generation, throughout the 24-week study. In the highest dose cohort, SerpinPC reduced the self-reported all bleeds ABR by 88% during the last 12 weeks of treatment (pre-specified primary assessment period) as compared to the all bleeds ABR prospectively measured during the pre-exposure observation period. In the highest dose cohort, five out of eight subjects had zero or one bleed during the 12-week pre-specified primary assessment period. Self-reported spontaneous joint bleeds ABR was reduced by 94% in the highest dose cohort. ABR reductions were similar between patients with either HA or HB.

SerpinPC is designed as a long-acting non-replacement therapy intended to be administered as an infrequent injection under the skin that 'rebalances' blood coagulation without the need for factor replacement. As a result, we believe SerpinPC could be an attractive alternative therapy for many patients, if approved. Other rebalancing approaches have been plagued by incidences of venous and arterial thrombosis. We believe that the expected mechanism of action of SerpinPC renders this an unlikely risk, since the secondary APC pathways (signaling and anti-thrombotic) remain intact at clinical doses. We believe that the observed lack of D-dimer elevation in healthy volunteers and persons with hemophilia support this profile.

The vialed drug product is presented as a sterile lyophilized powder intended for intravenous infusion or subcutaneous injection following reconstitution with water. Stability studies have shown the drug product to be stable at temperatures up to 40°C, and we expect a commercial product, if approved, will allow for ease of shipment and storage.

The product vision of SerpinPC is a one-size-fits-all treatment for hemophilia and potentially other bleeding disorders. Although our development plan will include both HA and HB subjects, the initial focus of our registration efforts will be HB, with and without inhibitors, given the higher unmet need and market opportunity in this patient population, who currently do not have alternatives to intravenous factor concentrate. The differentiated mechanism of action of SerpinPC is designed to enable an advantage over other rebalancing approaches under development, including fitusuran and concizumab. The hemophilia community, including persons with hemophilia, their physicians and caregivers, is risk averse given the devastation caused by HIV and hepatitis C transmission with plasma derived products. We believe that the trade-off of increased convenience or improved efficacy should not come at the cost of increased risk of serious adverse events such as thrombosis.

Clinical Data

Completed Trials

We announced positive topline results from the Phase 2a part of AP-0101, the six-month repeat dose portion of the ongoing open-label clinical trial evaluating the safety, tolerability and pharmacokinetics of subcutaneous doses of SerpinPC in male persons with severe HA and HB who were not on prophylaxis. Reduction in bleeding was an exploratory outcome.

The Phase 1 portion of this study was conducted in two parts, with Part 1a in healthy volunteers in a clinical trial unit in the U.K. In this part, four cohorts of healthy subjects received increasing doses of SerpinPC by IV infusion and one by subcutaneous injection. Part 1b was conducted in established clinical trial units embedded in university hospitals in Moldova and Georgia with access to the target patient population of persons with hemophilia receiving only on-demand factor concentrates. The SAD study switched to persons with hemophilia at a dose at which biological effects might be expected, 0.1mg/kg to 1.2mg/kg by subcutaneous injection in four cohorts of three subjects each.

All doses in Part 1 were well-tolerated without incident or SerpinPC-related adverse events, including injection site reactions. Administration of SerpinPC did not lead to increases in D-dimer, TNF or IL-6 at any dose.

All subjects in Part 1b had severe hemophilia and received factor concentrate on demand before and during the study. All patients had target joints (range 1 to 4, median 2.5). ABR was calculated for each subject from prospective observation prior to exposure to SerpinPC. The median ABR was 35 (range 26 to 41). In the eight weeks following a single subcutaneous injection of SerpinPC there was a 55% reduction in all bleeding and a 72% reduction in spontaneous joint and muscle bleeding. Five subjects experienced zero spontaneous bleeds for two months after receiving their single dose. In total 97 bleeds occurred in the pre-exposure observation period and 29 in the 8 weeks following exposure. All 29 bleeds following SerpinPC administration were treated with factor concentrate on-demand as per standard of care without incident and without elevation in D-dimer levels. No anti-drug antibodies (ADAs) were detected in Part 1.

All subjects who participated in Part 1b of the Phase 1 study chose to enroll in the Phase 2a study. The design of the Phase 2a study is summarized in the graphic below.

Figure 13: Schematic representation of the Phase 2a AP-0101 trial design.

In total, 23 subjects enrolled in the Phase 2a. One subject with a history of a skin disorder was discontinued because of an injection site reaction. SerpinPC was well-tolerated. No other SerpinPC-related AEs have been recorded. There was no reported sustained elevation in D-dimer throughout the 24-week study. Two subjects had anti-drug antibodies (ADAs) and remained on treatment without apparent impact on ABRs.

In the highest dose cohort, SerpinPC reduced the self-reported all bleeds ABR by 88% (from 36.0 median all bleed ABR to 4.4) during the last 12 weeks of treatment (pre-specified primary assessment period) as compared to the all bleeds ABR prospectively measured during the pre-exposure observation period. In the highest dose cohort, five out of eight subjects had zero or one bleed during the 12-week pre-specified primary assessment period. Self-reported spontaneous joint bleeds ABR was reduced by 94% in the highest dose cohort (from 21.1 median spontaneous joint bleeds

ABR to 2.2). ABR reductions were similar between patients with either HA or HB. The graphs and table below show the reduction in ABR and median target joints at all three dose levels.

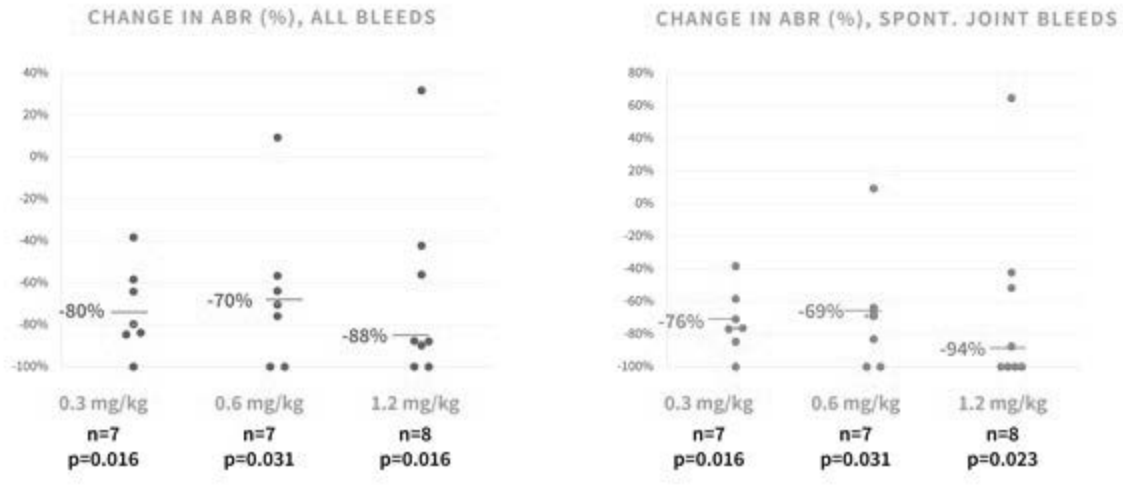


Figure 14: Change in ABR in the Phase 2a portion of AP-0101.

Median change in all bleeds ABR	0.3 mg/kg	0.6 mg/kg	1.2 mg/kg
Hemophilia A	-80% (n=5)	-64% (n=5)	-88% (n=8)
Hemophilia B	-72% (n=2)	-73% (n=2)	No subjects

* Post hoc analysis, no p-values calculated

Figure 15: Change in ABR for persons with HA and persons with HB in the Phase 2a portion of AP-0101.

The median number of target joints (joint with >3 bleeds in any 6-month period) was reduced to zero at the end of the study from a pre-exposure baseline of 2.5. All subjects had target joints at the start of the study and 15 subjects had zero target joints at the end of the study. The graph below shows the reduction in the number of target joints.

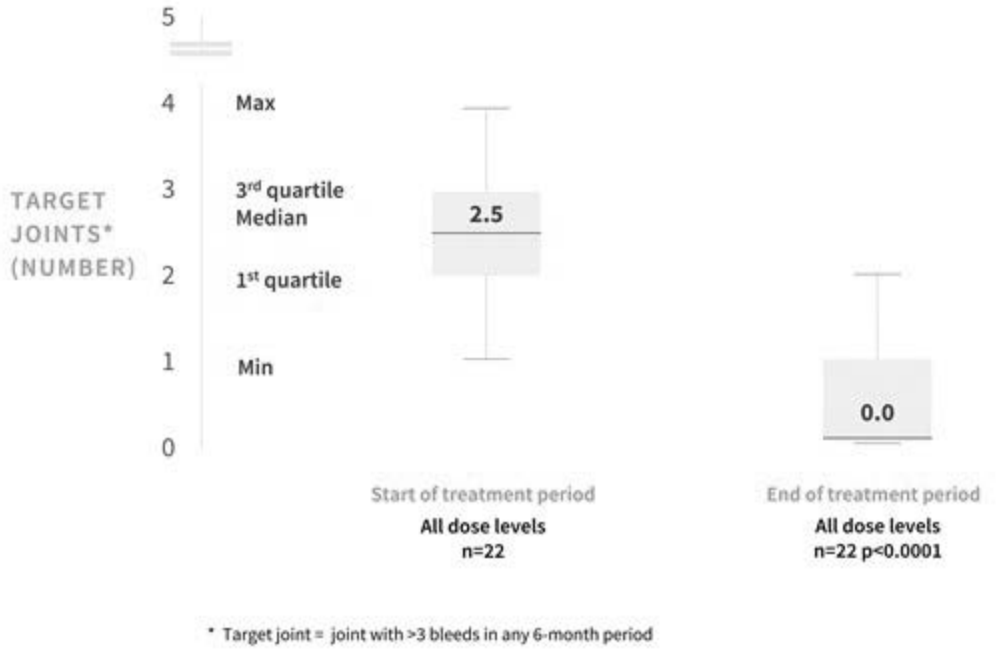


Figure 16: Number of target joints at the start and end of the treatment period in the Phase 2a portion of AP-0101.

We believe that the observed PK of SerpinPC could support a monthly dosing interval. Following five months of SC dosing once every four weeks, accumulation ratios for Cmax suggest no to minimal accumulation following this dosing regimen.

Ongoing Trials and Development Plan

All 22 subjects who completed the Phase 2a portion of AP-0101 have elected to enroll into the 48-week open label extension ("OLE") portion of the study in which a single flat 60 mg subcutaneous dose of SerpinPC will be administered every 4 weeks over a period of 48 weeks (13 doses total). One subject has discontinued due to emigration. Following this OLE study, subjects will be offered participation in a higher dose OLE study in which a 1.2 mg/kg subcutaneous dose of SerpinPC will be administered every 2 weeks over a period of 24 weeks. We expect to report data from the 48 week flat dose OLE study and interim results from the following 24 week high dose OLE study in the fourth quarter of 2022.

We are preparing for our first registrational study for HB in 2022. The design of this study, AP-0102, is summarized in the diagram below. The objective of the study is to evaluate the efficacy and safety of prophylactic SerpinPC in subjects with severe HB without inhibitors. In addition to HB subjects, the study will also enroll subjects with severe HA, with and without inhibitors, to add to the safety database. The study will have three parts: a 24-week randomized dose-justification part (Part 1) with approximately 60 subjects, a 24-week expansion part (Part 2) with approximately 60 further subjects at the dose selected from Part 1 based on an interim analysis, and a further 24-week extension part (Part 3) for subjects who complete either Part 1 or Part 2.

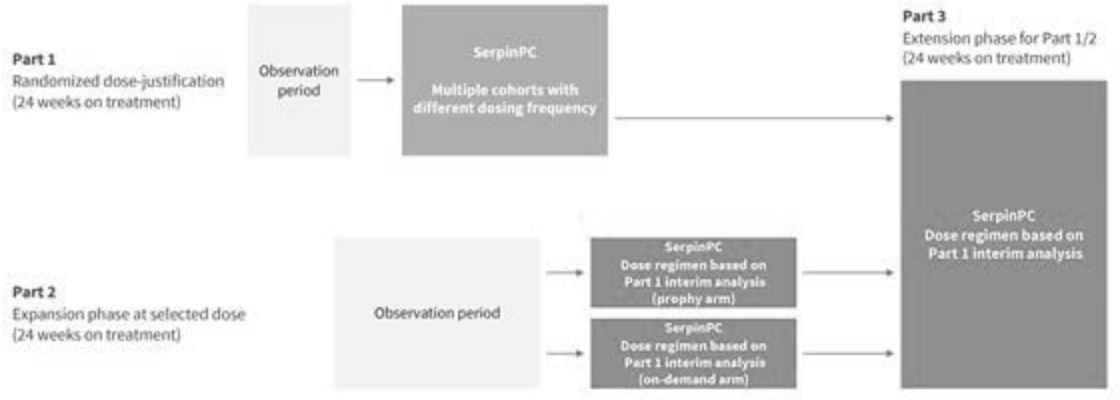


Figure 17: Schematic representation of the registrational AP-0102 trial design.

A separate registrational study is planned with fewer than 20 subjects to evaluate the efficacy and safety of SerpinPC in subjects with severe HB with inhibitors. Subjects in this study will receive SerpinPC 1.2 mg/kg every 2 weeks for 48 weeks.

Our intention is to develop a data package over the next several years to position SerpinPC as the next transformative therapy in hemophilia, if approved. The primary focus of our ongoing development plan is HB, with and without inhibitors. We believe the higher unmet need and market opportunity in this patient population, who currently do not have alternatives to intravenous factor concentrate, presents a compelling opportunity for SerpinPC, if approved, to potentially provide a convenient subcutaneous treatment option for persons with HB. Additional registrational plans for HA are in progress.

Product Exclusivity

We currently benefit from exclusivity of SerpinPC through a variety of means, including patent protection and through the exclusive license of rights under our agreement with the University of Cambridge. See "—Intellectual Property and License Agreements." In addition, we intend to apply for orphan drug designation for SerpinPC with the EMA and may apply for Breakthrough Therapy Designation with the FDA.

Emerging Programs

LB101 and LB201 in Solid Tumors

Summary

We aim to develop novel therapeutics based on our unique platform technology, which is designed to selectively drive potent effector function activity, such as CD47 or CD3, while avoiding systemic toxicity. The lead compound is LB101, a PD-L1xCD47 LockBody®, which has two anti-CD-47 domains blocked by two anti-PD-L1 domains, with proprietary human IgG-derived hinges linking the anti-CD47 and anti-PD-L1 domains. The cell-killing mechanism of action, in this case CD47, is blocked by the PD-L1 tumor targeting domain until the proprietary human IgG-derived hinges are naturally degraded in the TME, thus unlocking and activating the CD47 effector function activity in the tumor. The targeting domain, such as PD-L1, may have antitumor function itself in addition to the effector function. We are currently conducting preclinical evaluation, cell line development and IND-enabling studies for LB101. We expect to share preclinical data on LB101 at ASCO 2022 and plan to submit an IND to the FDA in late 2022.

We are also developing LB201, a PD-L1xCD3 LockBody®. The cell-killing mechanism of action, in this case CD3, is blocked by the PD-L1 tumor targeting domain until the proprietary human IgG-derived hinges are naturally degraded in the TME, gradually unlocking CD3 effector function activity and activating potent CD3 recruitment and T cell mediated killing in the tumor. We plan to submit an IND to the FDA for LB201 in 2023. The LockBody® programs are from our subsidiary LockBody Therapeutics Ltd (LockBody).

Disease Overview

According to the International Agency for Research on Cancer and the World Health Organization (WHO), the global solid tumor burden has increased to an estimated 19 million new cases and up to ten million deaths per year. According to the American Cancer Society, in the U.S. alone, there are an estimated 1.9 million new cases and over 600,000 solid tumor deaths annually.

Tumors are sometimes described as being "hot," meaning that they have been infiltrated by the body's T-cells, a part of the body's immune system. For this reason, hot tumors typically respond to immunotherapy treatment using checkpoint inhibitors to mobilize the T-cells' response to kill tumor cells. In contrast, "cold" tumors have not been infiltrated with T-cells and, as a result, immunotherapy drugs often have limited effect on these tumors.

Competition and Market Opportunity

While major improvements in understanding the biology of cancer and its treatment have been made in the past decades, there remains a significant unmet medical need for a large number of cancer patients across many different types of cancers. The advent of immunotherapies has been a significant advance in cancer treatment; however, modern immunotherapies, including the checkpoint inhibitors which target the PD1/PD-L1 pathway, are only effective in a minority of patients.

Currently approved checkpoint inhibitors are mostly active in the minority of "hot" tumors. The majority of solid tumors, however, are "cold", where no clear underlying immune response to the tumor exists. While a large body of evidence supports the potential of other immunotherapeutic approaches such as targeting CD47 in the treatment of many cancer types, actual clinical success has been very limited in part because of the narrow therapeutic index of available investigational agents. LB101 and subsequent compounds leveraging the same technology are specifically designed to address this gap.

We are aware of several programs under development as potential treatments for solid tumors, including those which utilize CD47 with or without PD-L1 to target tumor cells. These include Gilead Sciences, Inc. (Gilead), developing CD47 IgG combinations; Alx Oncology Holdings (ALX Oncology), developing SIRP receptor-Fc fusion + IgG combinations; Light Chain Bioscience, developing CD47 bispecific antibodies; Innovent Biologics, Inc. (Innovent), developing a PD-L1xCD47 bispecific; and Pfizer, developing a PD-L1xCD47 bispecific.

We are also aware of programs under development, including those which utilize CD3 with or without PD-L1 to target tumor cells. These include Harpoon Therapeutics, Inc. (Harpoon), developing activatable CD3 bispecifics; Takeda (Maverick Therapeutics), developing activatable CD3 bispecifics; Sanofi (Amunix), developing activatable CD3 bispecifics; and CytomX Therapeutics, Inc. (CytomX), developing activatable CD3 bispecifics.

Our Product Candidates

LB101, PD-L1xCD47 LockBody®

Many potential drug targets have been described that are hypothetically addressable via antibodies, but very few are exclusively expressed in diseased tissue. As a result, engagement of the target in non-diseased tissue often causes unwanted side effects. This off-tumor target expression often also leads to antigen 'sink' effects where large doses of the antibody must be given to ensure sufficient antibody penetrates the tumor to have a therapeutic effect. One such example is the class of antibodies that target the antigen CD47. The therapeutic potential of this target, coupled with the frustrating realities surrounding its pharmacology, inspired the development of our platform of LockBody® programs.

The platform was designed based on the principal of 'radical simplicity.' This holistic approach to molecular design led to the creation of a reproducible format that exhibits simple IgG-like expression and purification, high stability and solubility. This overcomes the severe reproducibility issues that are frequently observed for more complex molecular formats.

Historically, the use of CD47 binding agents to target solid tumors has been limited by certain intrinsic challenges. Such challenges include a "sink" effect produced by high expression of CD47 in the bloodstream and solid tissues in the body that may necessitate the administration of frequent, large initial doses to achieve therapeutic efficacy. In addition, the binding of blood cells by anti-CD47 also presents a significant toxicity risk, which precludes the use of strongly pro-phagocytic antibody isotopes. As a result, CD47 agents commonly exhibit modest monotherapy activity and require the addition of further pro-phagocytic therapies. Finally, the tumor is typically a 'hostile' environment with high expression rates of proteolytic enzymes such as MMPs and Cathepsins which can directly accelerate IgG degradation. These factors collectively limit the clinical potential of anti-CD47 antibodies and many other types of anti-tumor target antibodies where target expression is not limited solely to the tumor environment. LB101 is designed to address these issues directly by bypassing the CD47 sink, minimizing peripheral toxicity and driving maximal CD47 blocking activity into the tumor.

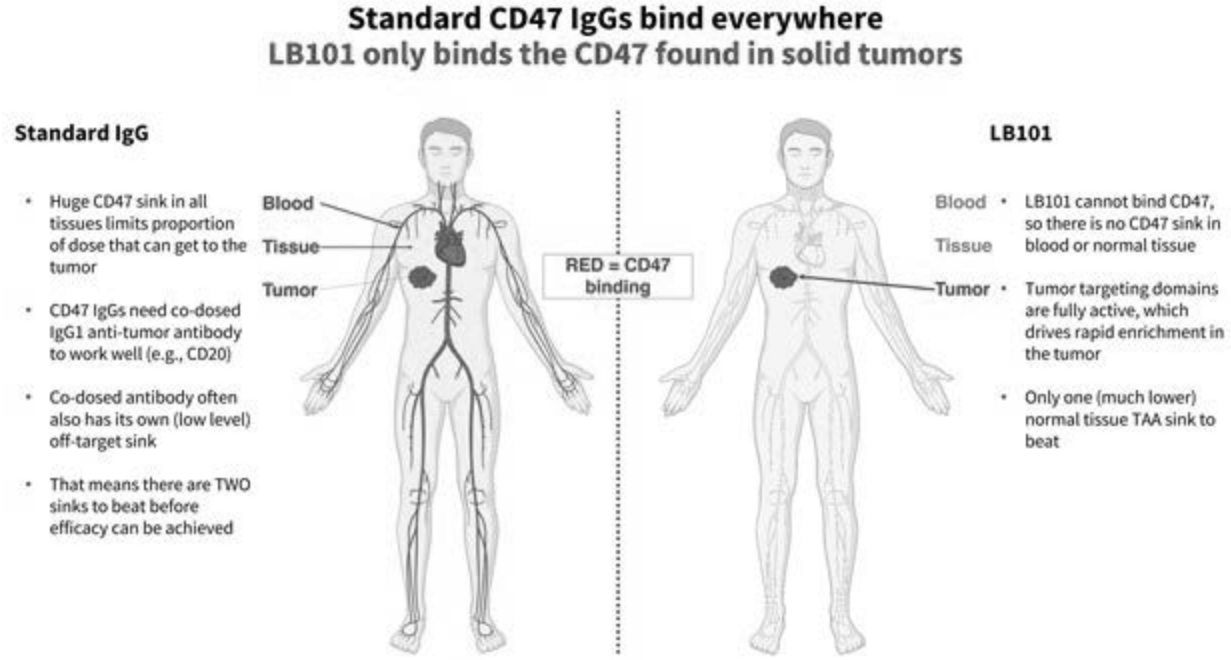


Figure 18: The intrinsic challenges of using CD47 binding agents (antibodies and receptor-Fc fusions) and how they are intended to be addressed by LB101

We believe agents that antagonize CD47 signaling by tumor cells hold great promise as potential therapies to treat both hot and cold tumors. CD47 is now an elucidated IO target in humans, but so far this promise has only been realized in blood cancers. Importantly, CD47 is broadly over-expressed and associated with poorer survival outcomes in many key solid tumor indications such as breast, NSCLC, colorectal, gastric, hepatic, renal and HNSCC cancers. These indications make up the majority of all solid tumor cases. CD47 upregulation in the tumor environment acts as a powerful checkpoint inhibitor which inhibits the potential tumor cell-killing functions of myeloid cells and NK cells. As such it is often known as the 'Don't eat me' signal. Therapies which effectively block this signal while also adding a powerful 'Eat me signal' have the potential to stimulate potent and durable immune responses against solid tumors.

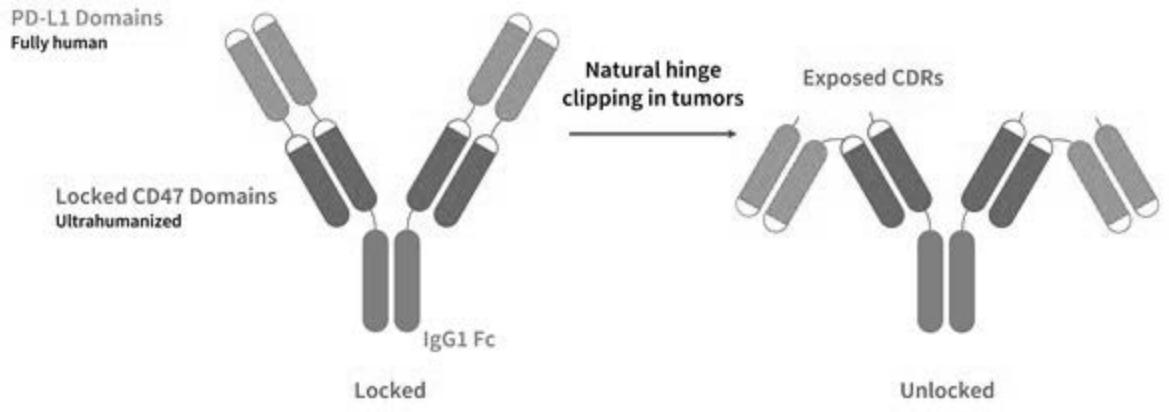


Figure 19: LB101 (PD-L1xCD47) design principles for LB101.

As illustrated in the figure above, a poorly tolerated mechanism of action such as CD47 is locked behind a well-tolerated tumor targeting domain such as PD-L1. In the example above, PD-L1 domains direct enrichment in PD-L1+ solid tumors. When locked, as on the left, CD47 binding is fully blocked and LB101 has the systemic tolerability and pharmacokinetic profile of a standard PD-L1 IgG1. Between the two anti-PD-L1 domains and the anti-CD47 domains are two unique, human IgG-derived, 'lower hinge' linker sequences which are highly structured in solution. These hinge linkers block CD47 interaction in the periphery by full steric inhibition of the CD47 binding site. Critically, the lower hinge linker design is based on the observation that these precise sequences undergo natural degradation in the TME, thereby exposing the inner binding domains and activating CD47 blockade to induce antibody-dependent cellular phagocytosis (ADCP). In the PD-L1+ TME, LB101 is first unlocked by MMP and/or Cathepsin proteolysis (accelerated at pH < 7.0), thereby allowing potent CD47 blockade and potent innate immune cell induction. A second unlocking will also occur for this compound, releasing the PD-L1 targeting and potentially leading to a 'super-activated' state in which the CD47 function is free to drive anti-tumor effect on tumor cells that are CD47+ regardless of their level of PD-L1 expression. The modular nature of the construction platform delivers endless optionality, where both TAA specificity and/or locked effector function can be changed at will by modifying the antibody variable domains.

We reasoned that an optimal single agent would combine PD-L1 targeting, potent CD47 blockade and would have a fully functional IgG1 Fc region, as illustrated in the figure below. In cancers, CD47/SIRPα and PD-L1/PD1 can act in concert to inhibit the ADCC, ADCP, inflammatory and antigen presenting functions of innate immune cells such as macrophages, dendritic cells, neutrophils, monocytes and NK cells. As a result, high CD47 expression limits tumor visibility to the adaptive immune system and minimizes T-cell education. We believe this combination of capacities has the potential to drive potent direct tumor cell killing by innate immune cells, maximal antigen presentation and education of the adaptive immune system, and strong pro-inflammatory signaling to recruit further immune cell infiltration and attack on the solid tumor mass.

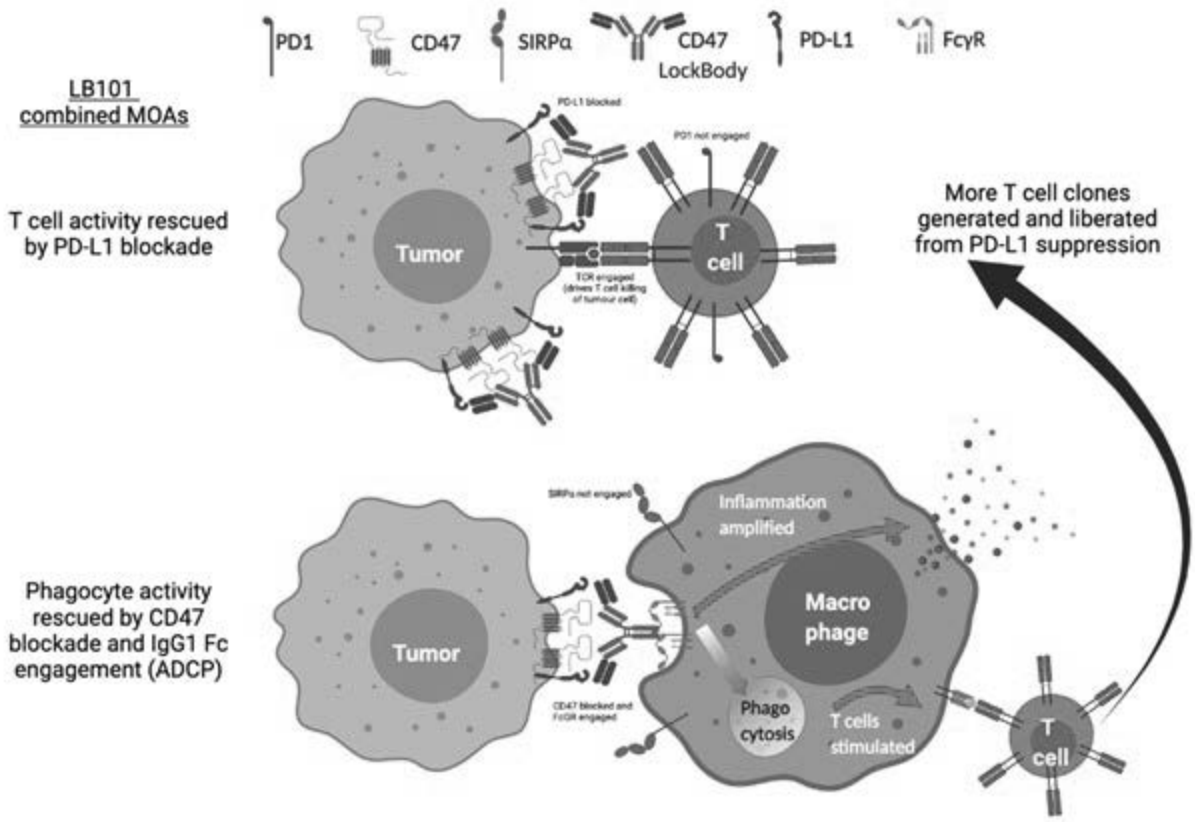


Figure 20: The technology for LB101 is designed to combine optimal factors for CD47 targeting into a single agent

LB101 is also designed to ameliorate a further critical limitation on the function of classical low-effector CD47 antibodies. To be fully effective, the low effector function, such as IgG4, CD47 blocking agent and high effector function IgG1 must be co-located on the same tumor cell surface at sufficient density to both effectively block CD47 and present enough human IgG1 Fc to drive potent activity. We believe that sinks, biodistribution limitations in the solid tumor environment, the complex pharmacology of having two agents with radically differing pharmacokinetics, different dosing schedules and cumulative toxicities all make this very difficult to achieve in practice. Our technology, in contrast, is designed to enrich all functions on the same cell surface.

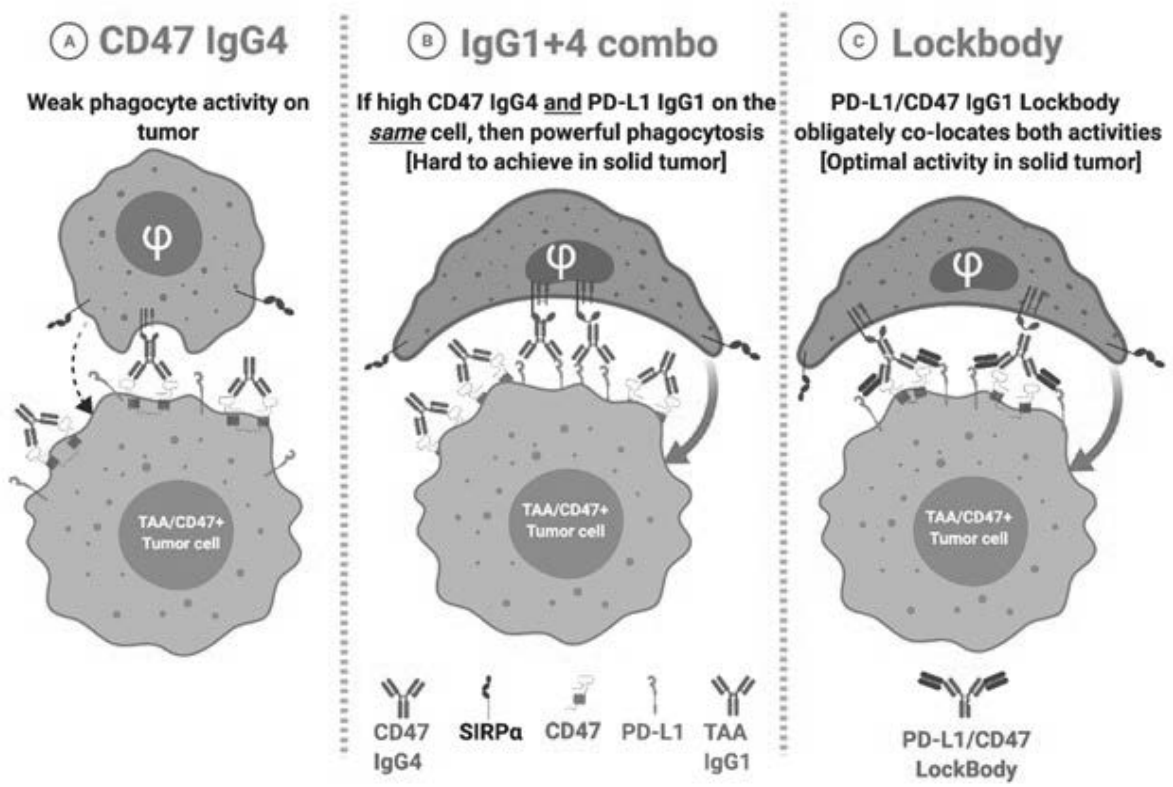


Figure 21: LB101 ameliorates 'the colocation conundrum'

LB201, PD-L1xCD3 LockBody®

Having created the CD47 LockBody®, we recognized that this same principle could be productively applied to CD3 ligating tumor targeting agents. Bispecific antibodies that bind to a TAA and recruit killer T cells via a constitutively active CD3 binding arm have also been used successfully in hematological cancers, leading to the approved product blinatumomab. Similar to CD47 agents however, they suffer from poor biodistribution (TAA sink, plus large secondary lymphoid CD3+ cell sink), toxicity driven by on target/off tumor activity and/or on tumor activity, coupled with excessive potency (cytokine storm). These factors have resulted in a paucity of positive outcomes in solid tumor clinical trials. To address all of these issues in a single agent, we have extended the initial design principle to create a 'single-arm' version in LB201, with CD3 as the locked mechanism of action.

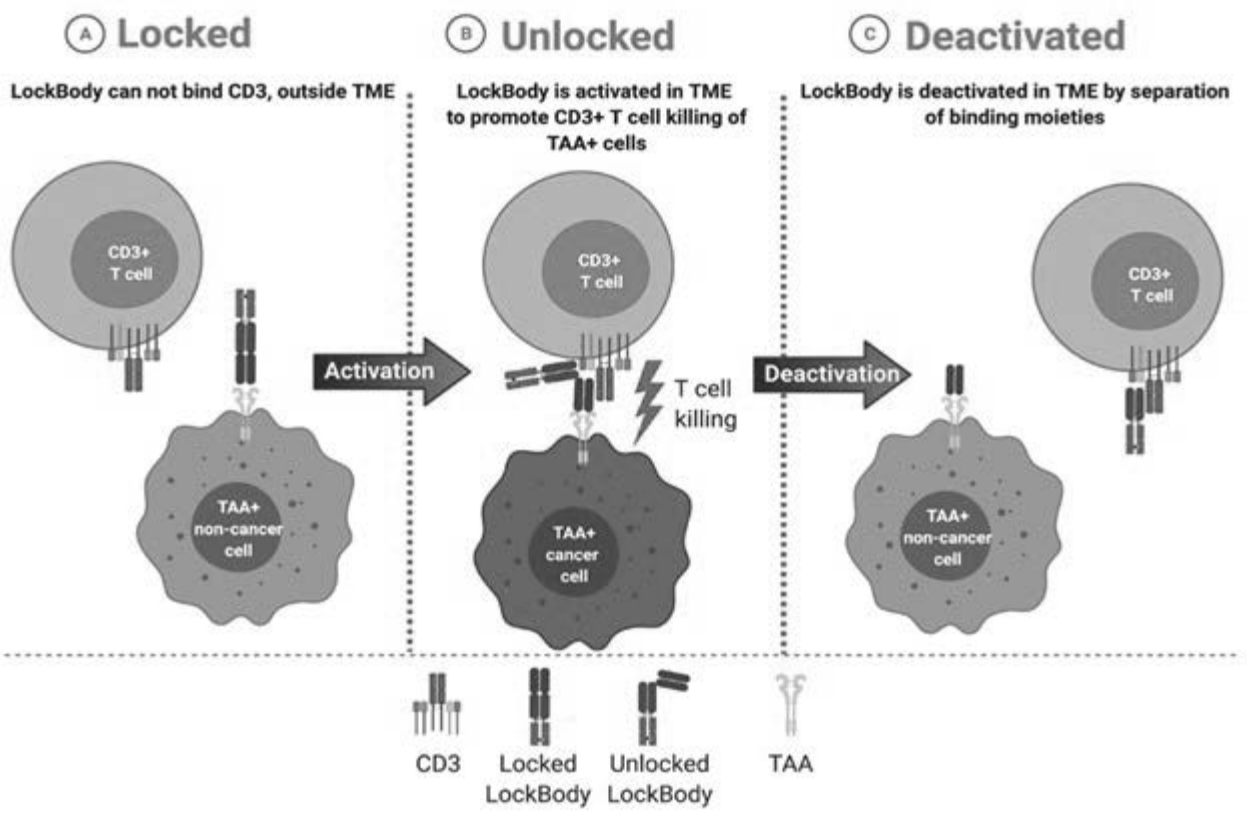


Figure 22: LB201 (PD-L1xCD3) design principles.

As illustrated in the figure above, CD3 is locked behind a well-tolerated targeting domain, with an effector null Fc domain, in a 'single-arm' format. (A) When locked, LB201 can bind TAA+ non-cancer cells but does not engage CD3. (B) In the tumor microenvironment, LB201 is gradually unlocked by MMP and/or Cathepsin proteolysis, thereby allowing potent CD3 recruitment and potent T cell mediated killing. (C) LB201 then progressively becomes de-activated, minimizing risk of activated CD3 escaping into the non-diseased tissue.

Preclinical Data using a Her2xCD47 construct to demonstrate the LockBody® mechanism

In vitro data

Having initially observed that LockBody® Her2xCD47 molecules were well expressed, soluble, stable and had mAb-like development characteristics, we demonstrated that the *in vitro* function of the purified proteins supported the hypotheses outlined above.

Target interaction measurements

Purified Her2xCD47 LockBody® was tested in locked and unlocked (activated using MMP12) forms using high-sensitivity Biacore technology. In this analysis, the locked form exhibited no measurable binding to CD47 protein, while the unlocked form demonstrated clear, high-affinity, concentration-dependent binding.

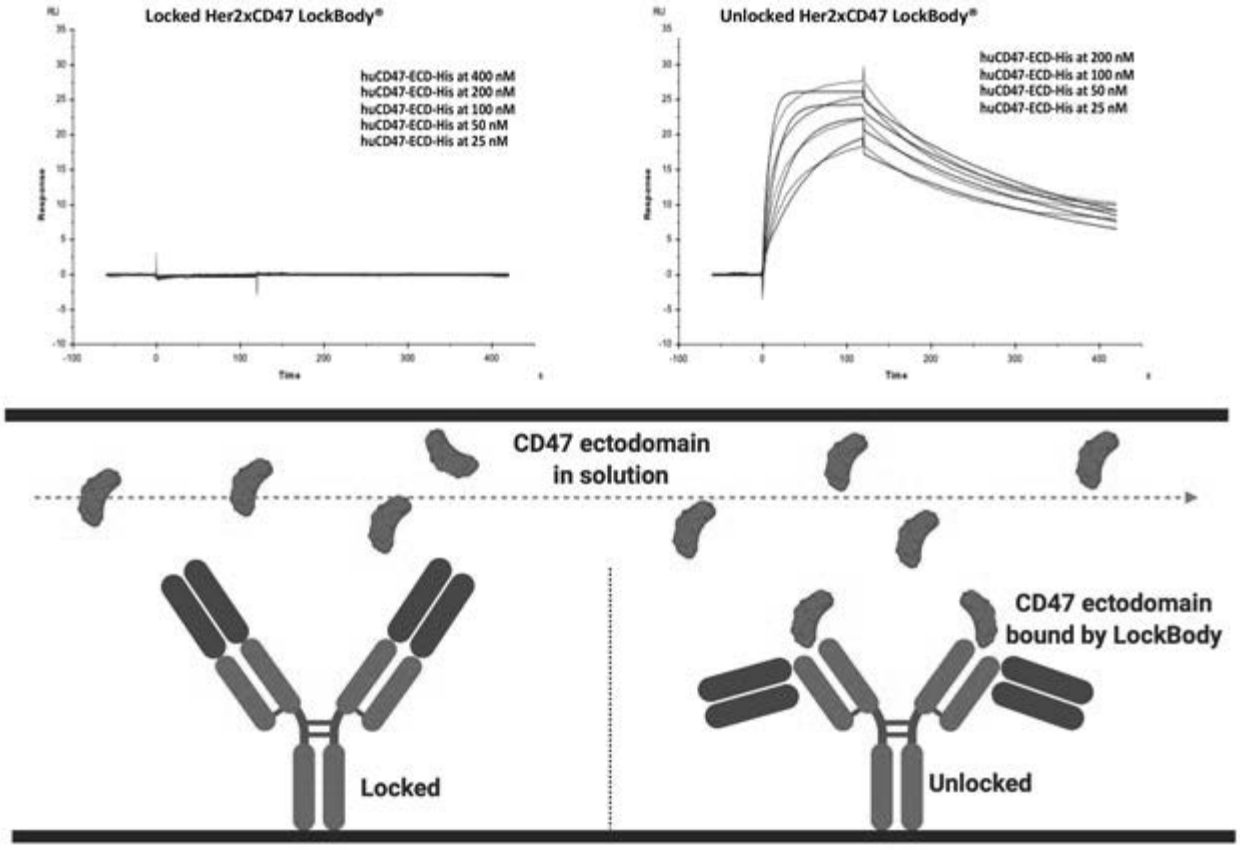


Figure 23: Her2xCD47 LockBody® applied in Biacore in both locked and unlocked states were analyzed for the ability to bind human CD47 at concentrations ranging from 25 up to 400nM.

Her2xCD47 LockBody® was also tested extensively in binding to CD47+, Her2- cells such as erythrocytes. These analyses demonstrated that neither the locked molecule nor Trastuzumab has ability to drive hemagglutination and neither agent shows measurable binding signal for erythrocytes in flow cytometry. Importantly, however, the IgG1 version of the CD47 antibody used in the LockBody® exhibited strong erythrocyte binding.

Potency in locked and unlocked states

Her2xCD47 LockBody® has been tested in phagocytosis of $Her2^{hi}/CD47^{hi}$ (BT474) and $Her2^{low}/CD47^{hi}$ (MCF-7) cells by primary human macrophages. These analyses demonstrated that the locked Her2xCD47 LockBody® and Trastuzumab are functionally equivalent, driving only weak phagocytosis of BT474 and none for MCF-7. The unlocked Her2xCD47 LockBody® drove potent, concentration-dependent phagocytosis that was equivalent to CD47 IgG4 on MCF-7 cells and significantly more potent on BT474.

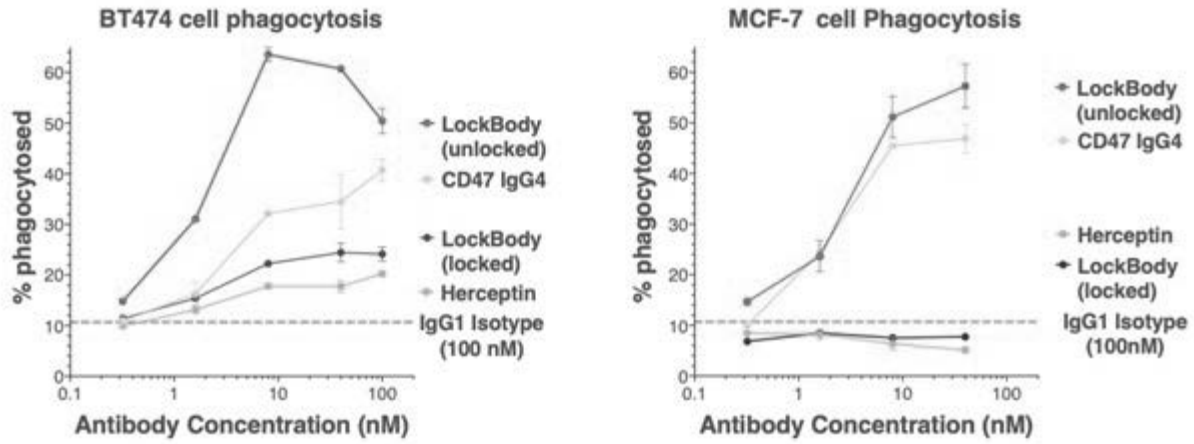


Figure 24: Primary human macrophage phagocytosis of BT474 and MCF-7 cells by Her2xCD47 locked and unlocked LockBodies, CD47 IgG4, Herceptin and IgG1 Isotype.

In vivo data

As *in vitro* analyses had suggested that the Her2xCD47 LockBody® was stable, soluble and lacked binding to CD47+ cells in its locked form, we performed *in vivo* pharmacokinetic and tolerability studies in mice (note: the CD47 antibody in the LockBody® is human/cyno/mouse cross-reactive and binds mouse erythrocytes strongly). To perform this study, we chose transgenic 'TG32' mice from Jackson laboratories (which express human FcRn) as these mice are associated with PK behavior for human antibodies that is more predictive of what happens in man than wild type mice. As the presence of human FcRn leads to lengthened exposure for human antibodies in the mouse, we reasoned that if the LockBody® was unstable *in vivo* (in either plasma or tissue), it would A) cause hematological toxicity signals associated with CD47 antibodies such as anemia, and B) exhibit rapid clearance, which is also associated with CD47 antibodies. The Her2xCD47 LockBody® and CD47 IgG1 (containing the same CD47 binding domain sequences as found in the LockBody®) were dosed at 2 and 10 mg/kg. The 10 mg/kg dose of the CD47 IgG1 was not tolerated, while 2 mg/kg dose was tolerated but exhibited extremely rapid target-mediated clearance. The LockBody® 10 mg/kg dose was generally well tolerated, as was the 2 mg/kg dose and both doses generated long, linear distribution with no evidence of target-mediated clearance. This led to a dramatic improvement in potential area under the curve (AUC) for LockBody® over the CD47 IgG1. None of the tolerated doses led to significant drops in hemoglobin values, but the 2mg/kg dose of CD47 IgG1 did exhibit classical erythrocyte clearance indicators, such as elevated reticulocyte levels. These data demonstrated that the Her2xCD47 LockBody® was generally well tolerated and stable *in vivo*, with antibody-like PK.

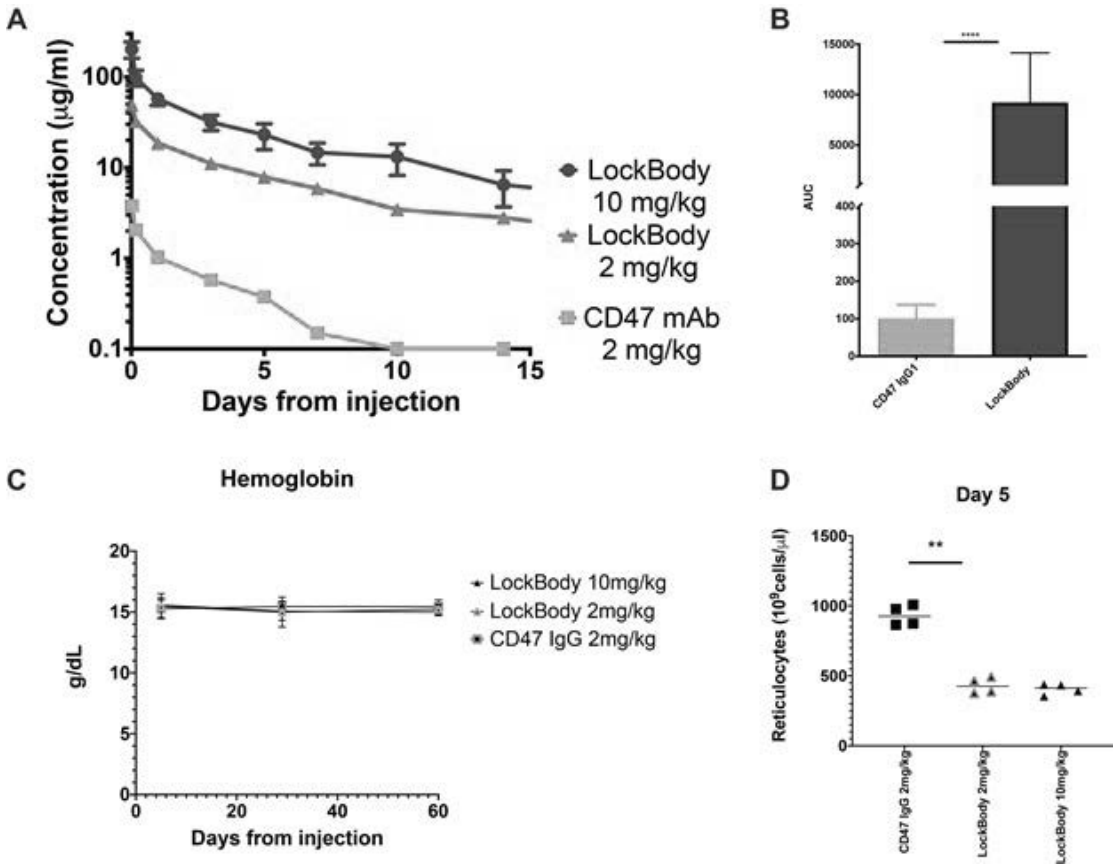


Figure 25: 'TG32' transgenic mouse (human FcRn) pharmacokinetics (A), exposure (B), hemoglobin levels (C) and day 5 reticulocyte levels (D) for Her2xCD47 LockBody® at 2 and 10 mg/kg, and CD47 IgG1 at 2 mg/kg (10mg/kg dose not tolerated).

As PK and single-dose tolerability studies had been successful for Her2xCD47 LockBody®, initial pharmacodynamic (PD) analyses were performed in NOD-SCID mice bearing established xenograft tumors generated from gastric cancer cell lines known to express both Her2 and CD47 targets. After 4 doses of vehicle, Trastuzumab or Her2xCD47 LockBody®, again, no tolerability issues were observed, and mice did not develop anemia in any dosing group. Tumor samples were taken and used to perform immunohistochemistry analyses examining immune infiltrates. The quantification of immune cell types demonstrated that the Her2xCD47 LockBody® could induce increased total CD45+ leukocyte infiltration and increased CD11b+ inflammatory myeloid cell infiltration, when compared to both vehicle and Trastuzumab. Importantly, no increases were observed for CD206+ anti-inflammatory 'M2' type macrophage. This data demonstrated that the Her2xCD47 LockBody® was generally well tolerated and stable *in vivo*, over multiple doses, but drove pro-inflammatory infiltration effects that were not observed for Trastuzumab when dosed head-to-head at equimolar concentrations. We believe this is evidence that the LockBody® protein remains locked in the periphery but becomes unlocked in the tumor environment.

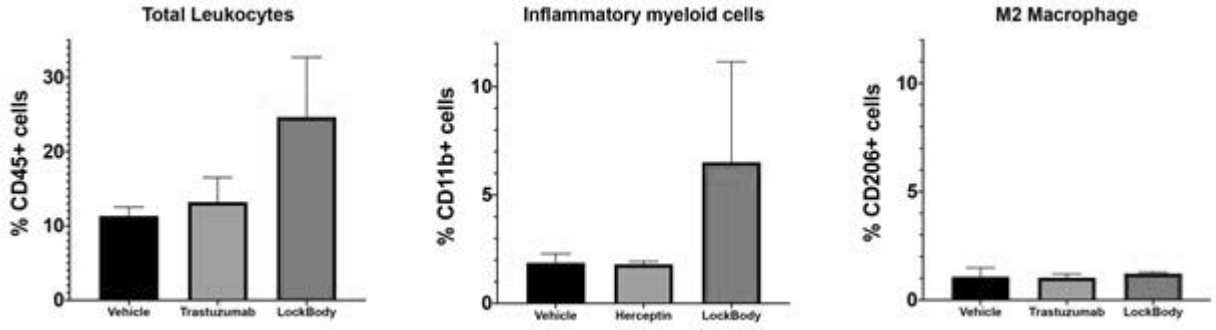


Figure 26: Tumor-infiltrating immune cell numbers (% total cells) in gastric cancer models in NOD-SCID mice.

Development Plan

We are currently conducting IND-enabling activities for LB101. We expect to share foundational preclinical data at ASCO 2022 evaluating the activity and tolerability of LB101 monotherapy in a hPD-L1+ syngeneic model in mice, in comparison with atezolizumab. We plan to submit an IND for LB101 in late 2022. LB201 is currently in preclinical development, and we plan to submit an IND for LB201 in 2023.

ZF874 in AATD

Summary

We are developing ZF874, a small molecule pharmacological chaperone folding corrector of Z-A1AT for patients with AATD. ZF874 is from our subsidiary Z Factor Limited (Z Factor). Z Factor was formed based on the hypothesis that molecules that could bind into a version of the Z-Pocket found in the last folding intermediate, the one stalled by the Z mutation, would accelerate the final folding step to the native state, thus rescuing folding and secretion. This crystal structure was licensed into Z Factor in 2015 and remains our exclusive know-how. The proprietary structural insight into the misfolding of Z-A1AT allows our team to continue exploring the potential of compounds across multiple chemical families. In addition to the clinical lead of ZF874, we are advancing ZF887, which originates from a different chemical family than that of ZF874.

Disease Overview

A1AT, also known as alpha-1-proteinase inhibitor and SerpinA1, is a protease inhibitor belonging to the serpin family. It is produced in the liver and circulates in its native state in human blood at approximately 1.5 g/L. Its main role is to protect tissue from proteases released by neutrophils, such as human neutrophil elastase, cathepsin G and proteinase 3. A1AT inhibits proteases utilizing the well-characterized ‘mousetrap’ mechanism of protease inhibition.

AATD is an autosomal recessive disorder most frequently caused by missense mutations in the A1AT gene that lead to misfolding, and therefore reduced secretion of native A1AT into the circulation. Over 100 mutations have been described that lead to deficiency of A1AT, the most common of which is the ‘Z’ mutation, with 1 in 25 individuals of European descent carriers (PiMZ), and 1 in 1,800 homozygous. Individuals homozygous for the Z mutation (PiZZ) have A1AT levels 10–15% of normal and account for 95% of the known cases of AATD. Although classified as a rare disease, AATD is one of the most common rare diseases, with incidence similar to cystic fibrosis. AATD remains highly underdiagnosed, but it is estimated that there are over 200,000 PiZZ individuals in the US and Europe. PiSZ individuals (S denotes a milder deficiency mutation) are also at increased risk of COPD, and there are estimated to be 1.2 million PiSZ individuals worldwide. Market expansion into PiMZ, of which there are an estimated 42.4 million individuals, is possible in the large subset of the general COPD and NASH populations, where the PiMZ genotype is highly over-represented.

The small fraction of Z-A1AT that is secreted is in the native conformation, has a half-life in blood indistinguishable from the wild-type protein (M-A1AT) and is functional as a protease inhibitor, with similar inhibitory activity against the target proteases. However, the low plasma concentration is insufficient to protect the lungs from proteolytic degradation. PiZZ individuals who smoke develop chronic obstructive pulmonary disease (COPD) as early adults, and non-smokers are also at high risk for developing COPD in their thirties and forties. The penetrance of COPD in the PiZZ population is estimated to be 80%, with 50–72% eventually dying of respiratory failure. Carriers of the Z variant are also at increased risk of COPD, with an odds ratio (OR) of 5 for never smokers and 11 for smokers.

AATD can also manifest as liver disease. 10% of PiZZ newborns develop cholestatic hepatitis, a quarter of whom will suffer acute liver failure and require an emergency transplant. The liver manifestation of AATD is bimodal, with about half of PiZZ individuals exhibiting some liver function abnormality in infancy that usually resolves, followed by increased risk of cirrhosis and hepatocellular carcinoma from mid-life. Approximately one-third of PiZZ carriers have cirrhosis at the time of death, and about 10% of the PiZZ population die of liver failure. The OR for developing liver cancer is 20 for the PiZZ population. The liver disease manifestations of AATD are only found associated with the presence of the Z mutation, and are considered to be a ‘gain-of-function’ disorder, in contrast to COPD which is simply caused by the lack of circulating anti-protease activity. This has been explained by the accumulation of ‘polymers’ of Z-A1AT in the ER of hepatocytes, although why this is toxic to the liver remains unclear.

In the typical PiZZ patient, a two-fold improvement in Z-A1AT secretion from 0.27 to 0.55 g/l is likely to provide clinical benefit since 0.55 g/L (11 μM) is considered sufficient to offer protection from lung disease.

Competition and Market Opportunity

There is currently no approved therapy to counter directly either the lung or liver disease manifestations of AATD. Augmentation therapy, such as PROLASTIN-C®, marketed by Grifols, S.A. (Grifols), consists of weekly IV infusions of plasma-derived A1AT and is available in some countries for patients with established COPD, based on increased A1AT levels above 11 μM. The National Institute for Health and Care Excellence (NICE) does not recommend its use in the United Kingdom due to unclear clinical benefit and a cost of £100,000 per patient year. It is not approved anywhere as a prophylactic to prevent development of COPD in PiZZ individuals, and it has no impact on the liver. Lung and/or liver transplantation are the only other available treatment options, besides the normal management of the disease manifestations of AATD.

Next generation augmentation therapies are currently under development for lung manifestations of AATD, including INBRX-101, being investigated by Inhibrx, Inc. (Inhibrx) in Phase 1 clinical development. Alternative approaches for lung manifestations of AATD includes alvelestat, an oral neutrophil elastase inhibitor being investigated by Mereo BioPharma Group plc (Mereo BioPharma) in Phase 2 clinical development. Several alpha-1-antiproteinase RNAi therapeutics are also being pursued to address liver manifestations of AATD, including ARO-AAT being investigated by Arrowhead Pharmaceuticals, Inc. (Arrowhead) and Takeda Pharmaceutical Company Limited (Takeda) in Phase 3 clinical development and belcesiran being investigated by Novo Nordisk (Dicerna) in Phase 2 clinical development. BioMarin is investigating BMN 349, a molecular chaperone to understand if it impacts folding of zA1AT, currently in preclinical development. There are also other small molecule folding corrector approaches being investigated by Vertex Pharmaceuticals Inc. (Vertex), currently in preclinical development after Vertex announced its lead molecule in Phase 2, VX-864, would not advance. In addition to these programs, gene / RNA editing approaches are being investigated by multiple companies in preclinical development.

We believe that if approved, ZF874 has the potential to address underlying disease pathology with the ability to treat both liver and lung manifestations of AATD.

Our Product Candidate

We are developing ZF874 as a disease-modifying treatment candidate for AATD caused by the common Z mutation. Based on the proprietary crystal structure of Z-A1AT, *in silico* screening was conducted to find compounds that bind to the Z-Pocket. 414 *in silico* hits were tested for improved secretion of human Z-A1AT from transfected cells. From that screen, 117 of the 414 *in silico* hits (28%) were positive in this *in vitro* assay at 300 nM, suggesting an enrichment over a random compound screen. The large number of active chemical entities allowed us to prioritize molecules believed to possess excellent drug properties. ZF874 is the result of medicinal chemistry conducted on a lead compound identified from the *in silico* screen, guided by structure-activity relationship principles (*in vitro* activity, absorption, distribution, metabolism and excretion (ADME), and oral PK properties, safety indicators and *in vivo* activity).

ZF874 has a low molecular weight, high aqueous solubility, high oral availability, low plasma protein binding, PK properties suitable for daily oral dosing, and is renally excreted. ZF874 is a potent and specific folding corrector for Z-A1AT, improving secretion from transfected cells. ZF874 acts catalytically, with no observable binding to native Z-A1AT. ZF874 is a very stable molecule with a process that is amenable to scaling to support current clinical and future commercial needs. Preclinical data showed increased blood levels of Z-A1AT and clearance of Z-A1AT polymer from liver in mice over-expressing human Z-A1AT at lower doses than in human studies.

We are currently conducting the Phase 1 Part B ZF-0101 study evaluating the safety, tolerability and pharmacokinetics of ZF874 in PiXZ subjects. Increase in serum A1AT levels is an exploratory outcome. Initial data from the first three subjects dosed in the study is the first demonstration that a pharmacological chaperone can provide sufficient functional Z-A1AT increases in serum to potentially achieve greater than 11 micromolar levels in individuals with the PiZZ genotype.

Clinical Data

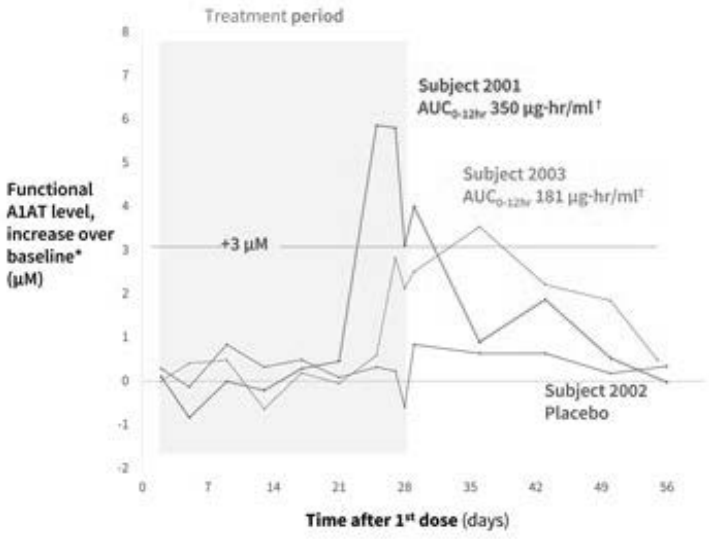
Ongoing Trials and Development Plan

We are currently conducting a Phase 1 study (designated ZF-0101), comprised of a SAD in healthy volunteers (Part A) and repeat dosing study for at least 28 days in PiXZ subjects (Part B). ZF874 is formulated as powder in bottle, and all doses are administered as drinks. In the completed Part A study, seven cohorts of healthy volunteers were successfully dosed up to 50 mg/kg fasted. All doses were well-tolerated, except for a transient apparent Cmax effect at 50

mg/kg in the fasted state, similar to what was observed in the dog at doses above 100 mg/kg. 50 mg/kg was well-tolerated when given as 25 mg/kg bid (12 hour interval). PK was consistent with expectations, with good oral availability and a ~4 hour half-life.

The Part B study is a repeat dosing study for at least 28 days in PiXZ subjects and will enroll multiple cohorts of up to 5 PiXZ subjects each. Cohort 1 has completed, with two subjects receiving two daily doses of 15 mg/kg ZF874 and 1 subject receiving placebo. Since Cohort 1, we have undertaken a number of actions to accelerate enrollment and facilitate dose exploration in PiXZ subjects, including opening additional sites in the UK. Cohort 2 will receive two daily doses of 2.5 mg/kg ZF874. Dose selection for the following cohorts will be based on a comprehensive data review from the preceding cohort, including safety, tolerability, PK and change in serum A1AT levels. Pending the receipt of satisfactory long-term animal toxicology data, the protocol may be amended to extend the duration of dosing. Safety, tolerability and PK are primary endpoints. Increase in serum A1AT levels is an exploratory outcome.

Initial data from the first three subjects dosed in the Part B study (Cohort 1) is the first demonstration that a pharmacological chaperone can provide sufficient functional Z-A1AT increases in serum to potentially achieve greater than 11 micromolar levels in individuals with the PiZZ genotype. In both PiMZ subjects dosed with 15 mg/kg BID of ZF874, the observed increase in functional A1AT was between 3.5 and 6 micromolar for these subjects with one Z-gene copy. The A1AT levels began to increase rapidly in the last week of dosing. After only 28 days of dosing the amount of A1AT was similar to achieving 12 to 17 micromolar in individuals with two Z- gene copies (PiZZ). In pre-clinical PiZ mouse models treated with ZF874, A1AT continues to rise with dosing beyond 28 days. A1AT plasma levels of 11 micromolar have been the basis for approval of the existing A1AT augmentation therapies. A1AT levels in the placebo-treated subject were not observed to change significantly. Consistent with a pharmacological effect for ZF874, and as expected based on the circulating half-life of A1AT, levels returned to baseline by 28 days after completion of dosing. The demographics and change in A1AT functional activity for the three PiMZ subjects is shown in the below figure.



Demographics and data
First 3 subjects in Part B

Subj.	Treatment	Genotype	Baseline A1AT*	Peak A1AT
2001	15 mpk BID (1.6 g BID)	MZ	17.6 µM	23.5 µM
2002	Placebo (N/A)	MZ	12.7 µM	13.5 µM
2003	15 mpk BID (1.1 g BID)	MZ	14.8 µM	18.3 µM

* Activity level equivalent to molar amount of M A1AT reference standard. Baseline for each subject = average of Pre-Screen , Day -1, and Day 1 Pre-Dose values for each subject
† Trapezoidal AUC for the first 12 hours after the first dose on Day 28
* Baseline = average of Pre-Screen, Day -1 and Day 1 Pre-Dose values from A1AT functional assay

Figure 27: Functional A1AT levels in PiMZ subjects in the Phase 1 Part B portion of ZF-0101.

Pharmacokinetic analysis showed a two-fold higher exposure to ZF874 in one subject. This subject showed a two-fold higher increase in functional A1AT as well as a delayed, reversible increase in ALT (8x ULN) and AST (3.5x ULN). All other liver function tests including bilirubin, GGT, and ALP remained in the normal range. All other adverse events reported in the Study were classified as mild. Due to enrollment challenges at the single clinical site, and following the observation of elevated liver enzymes in one Study participant, we elected to unblind the Study prior to completing Part B enrollment. The change in ALT for the three PiMZ subjects is shown in the below graph.

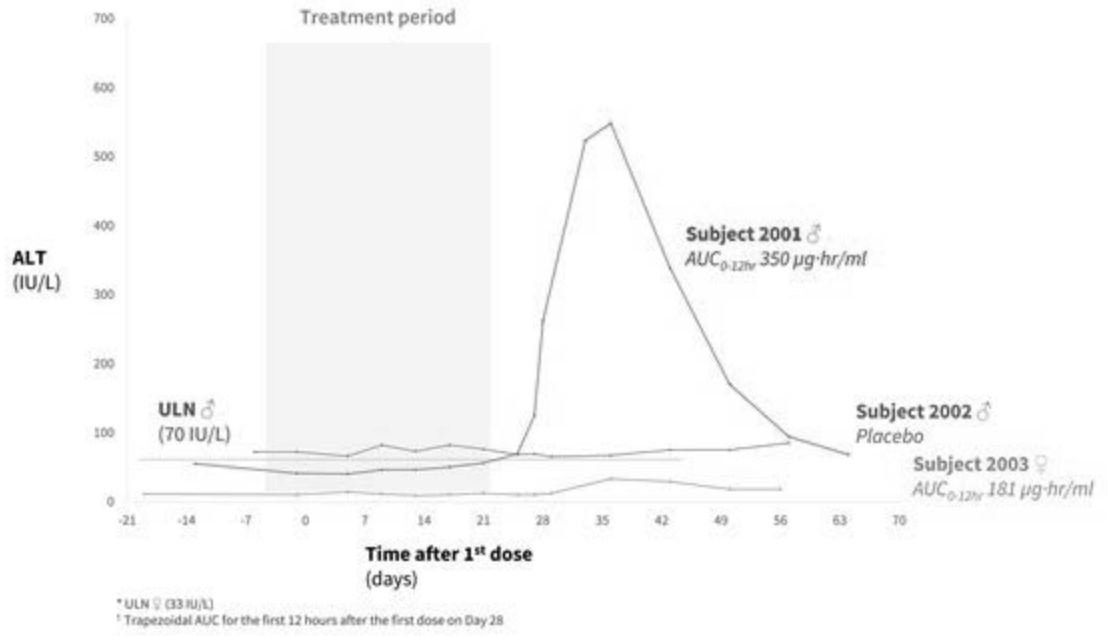


Figure 28: ALT levels in PiMZ subjects in the Phase 1 Part B portion of ZF-0101.

We have amended the protocol for the Part B study as described above to accelerate enrollment and facilitate dose exploration in PiXZ subjects, including opening additional clinical sites. We expect to report additional data from multiple dose cohorts, which include both PiZZ and PiMZ subjects, in the second half of 2022. We plan to initiate a global Phase 2 study, including a 6-month continuous dosing portion with paired liver biopsy, contingent on completion of our ongoing dose justification work in Phase 1.

Our ongoing development plan is aimed at generating data on our small molecule pharmacological chaperone folding correctors of Z-A1AT to address the unmet need of patients with liver and lung manifestations of AATD.

Product Exclusivity

We intend to protect exclusivity of ZF874 and other compounds across multiple chemical families principally through patent protection and the exclusive license of rights under our agreement with the University of Cambridge. See "—Intellectual Property and License Agreements."

MGX292 in PAH

Summary

We are developing MGX292, a disease-modifying, protein-engineered variant of human bone morphogenetic protein 9 (BMP9), for the treatment of PAH. PAH, a severe form of pulmonary hypertension, is a progressive life-limiting disease caused by narrowing of small pulmonary arteries in the periphery of the lung. MGX292 is currently in preclinical development, in the IND-enabling stage. We plan to submit an IND to the FDA in early 2023 to commence a clinical program for this product candidate. MGX292 is from our subsidiary Morphogen-IX Limited (Morphogen-IX).

Disease Overview

PAH is a rare disease with a major unmet medical need. Patients initially present with progressive breathlessness on exertion caused by severely elevated blood pressure in the pulmonary circulation, leading to death from right-sided heart failure. Females are more commonly affected than males, and the disease can manifest at any age, though we estimate to be typically in the 20-60 age group. PAH can occur spontaneously, which is termed idiopathic PAH, in approximately 50% of cases, or in association with other underlying conditions, such as congenital heart disease, connective tissue disease and liver disease. Together, these conditions comprise WHO Group 1 PAH, for which existing drugs are approved.

PAH has a prevalence of 11 to 26 per million individuals, affecting approximately 70,000 patients in North America, Europe and Japan. Although many factors, including altered growth factor signaling, inflammation and metabolism are features of PAH pathobiology, it remains uncertain to what extent these factors are causal as opposed to secondary manifestations, as most previous attempts to target these pathways with therapeutics have been unsuccessful in PAH patients. In contrast, genetic evidence for the causality of PAH provides a strong basis for drug discovery efforts. The genetic evidence in PAH emerges from patients with a family history of disease and from patients with idiopathic PAH. 75% percent of patients with a family history of PAH have heterozygous loss-of-function mutations in the bone morphogenetic protein type 2 receptor (BMPR2). Mutations in BMPR2 are found in 15% to 40% of patients with idiopathic PAH. Since the discovery of BMPR2 mutations in 2000, further causal mutations in components of the BMPR2 pathway have been discovered in PAH patients. Mutations in BMPR2 confer an increased risk of developing PAH of approximately 100,000-fold.

This genetic evidence indicates a central causal pathway in PAH defined by the circulating BMP ligand, BMP9, derived from the liver that engages a receptor complex comprising ALK1 and BMPR2 on pulmonary endothelial cells. The highest levels of expression of ALK1 and BMPR2 are found in lung endothelial cells. Thus, loss of BMP9 signaling selectively confers susceptibility to PAH without compromising other vascular beds or organ systems. Approximately a quarter of idiopathic PAH patients have loss-of-function mutations in the BMP9 signaling axis. This may occur from a reduction in ligand or in receptor expression (depicted by the red arrows in the image below). The normal pulmonary circulation is protected and maintained when this signaling pathway is intact. Loss of function leads to pulmonary vascular cell dysfunction, with increased permeability of the endothelium and increased apoptosis of endothelial cells, and the formation of plexiform lesions. The endothelial dysfunction promotes expansion of the underlying smooth muscle cells leading to constrictive vascular lesions. The image shows endothelial cells stained in red and the proliferation of surrounding smooth muscle cells stained with green from a patient with PAH.

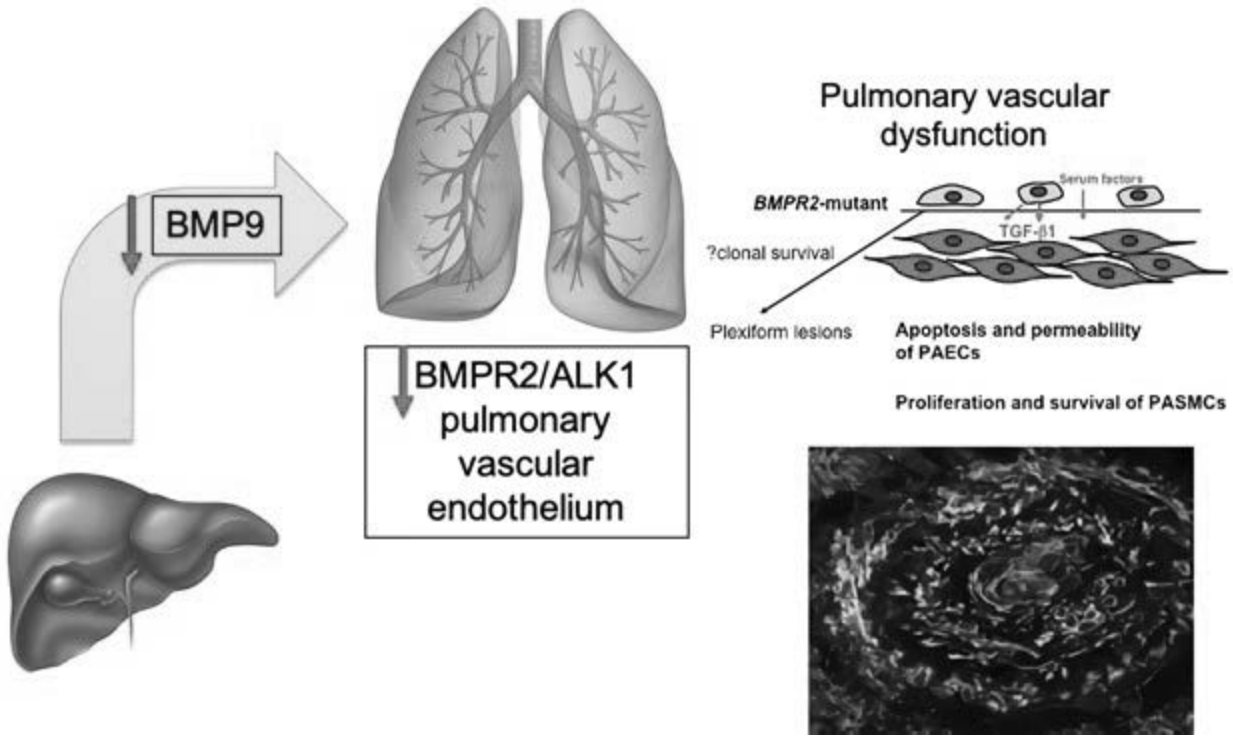


Figure 29: Central causal pathway in PAH.

Furthermore, patients with portopulmonary hypertension, which is PAH in the presence of cirrhosis, exhibit markedly reduced levels of plasma BMP9 that predicts the development of PAH. Taken together, these discoveries provide strong target validation for approaches that enhance BMP9/BMPR2/ALK1 signaling as a novel therapeutic approach for PAH.

An important observation is that dysfunction of the BMP9/BMPR2/ALK1 pathway is not confined to patients with genetic forms of PAH. Patients with various forms of Group 1 PAH have been shown to exhibit a deficiency of this pathway, whether it be reduced expression of the BMPR2 receptor, or reduced circulating levels of BMP9. In addition, the

widely used animal models of PAH are characterized by reduced BMPR2 and BMP signaling in the lung. Thus, approaches to enhance activity of the BMP9 pathway are likely to be broadly applicable to Group 1 PAH, and potentially other WHO Groups, for which there are no approved treatments.

Competition and Market Opportunity

While approved drugs for PAH exist, current treatments do not impact the underlying pathophysiology of the disease and are not disease-modifying. The currently approved drugs to treat Group 1 PAH were largely developed to treat other cardiovascular conditions and have been repurposed for PAH. These drugs target vasoconstriction by either enhancing prostacyclin signaling prostaglandin I2 (IP receptor agonists), inhibiting the actions of endothelins (ERA antagonists), enhancing nitric oxide signaling (PDE5 inhibitors, guanylate cyclase activators) or a combination of these approaches. However, vasoconstriction is a small component of established human PAH and vasodilators fail to reverse the lung vascular pathology that characterizes PAH. Further, vasodilator therapies are often used in combination (two or three drug classes) but despite these options, the prognosis for PAH remains poor. According to U.S. and European registries the mortality rate at three years is approximately 40%. Alternative approaches that target the pulmonary vascular cell dysfunction leading to vascular remodeling have the potential to be truly disease modifying in PAH.

The total global market for PAH is estimated at $6.0 billion per annum based on sales of approved drugs. Although we are not aware of any competitors developing BMP-based agonists for PAH, Merck & Co., Inc. (Merck) is currently investigating sotatercept in Phase 3 clinical development and Keros Therapeutics, Inc. (Keros) is currently investigating KER-012 in Phase 1 clinical development. Both are ligand trap-based investigational treatments for PAH, which are designed to inhibit signaling via the TGF-beta superfamily ligands, Activin, GDF8 and GDF11, but neither has been shown to enhance BMP9 signaling in animal models.

Our Product Candidate

We are developing MGX292, a protein-engineered variant of BMP9, for the treatment of PAH. MGX292 is designed to overcome the functional deficiency in BMP9 signaling found in patients with PAH, restore vascular function and reverse established disease pathology in the pulmonary arterioles. We believe MGX292, if approved, has the potential for disease reversal/modification in patients with PAH, thereby potentially enhancing life expectancy and reducing symptoms. MGX292 is being developed initially as an intravenous formulation, and we are currently evaluating subcutaneous dosing.

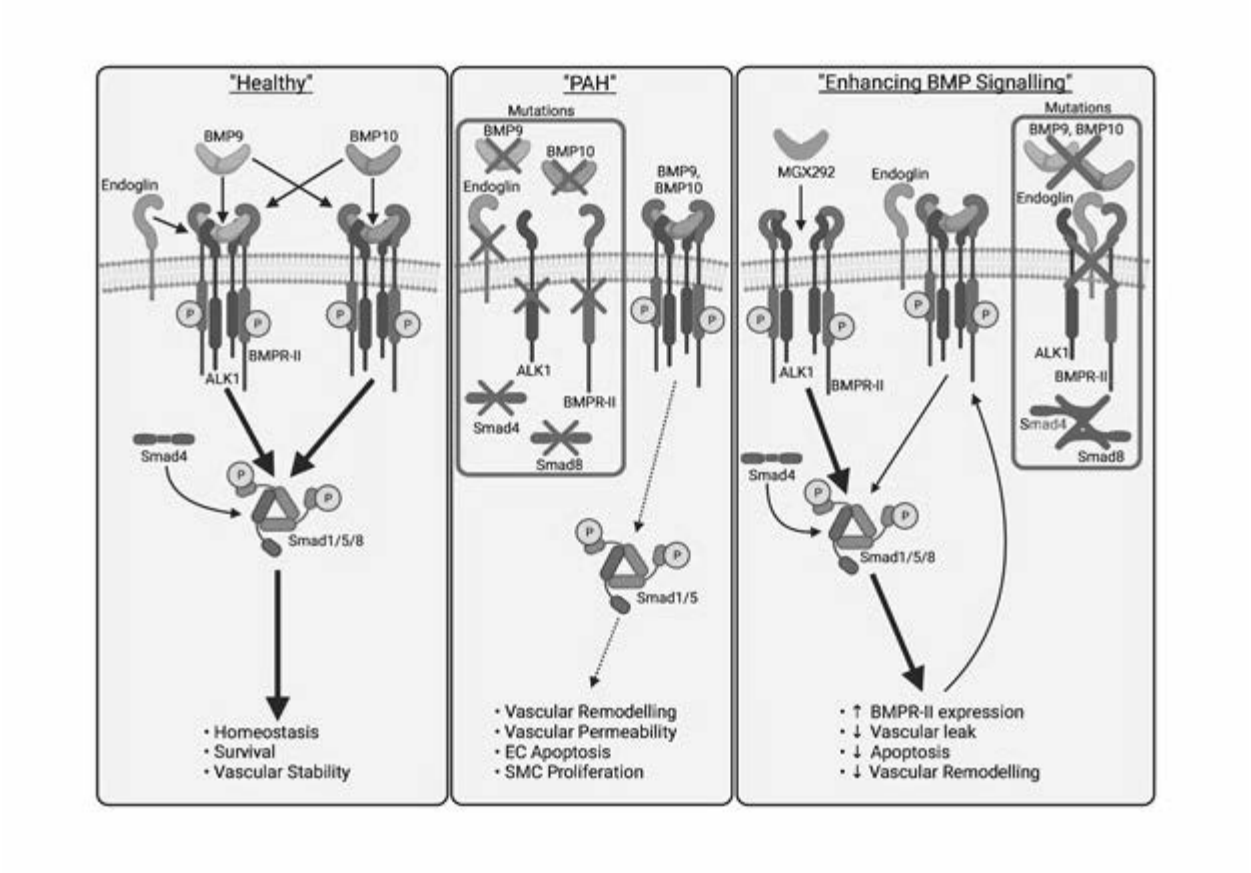


Figure 30. The rationale for BMP9-based therapies in PAH. Left panel: Circulating BMP9 and BMP10 signal via high affinity endothelial cell surface receptor complexes comprising ALK1 and BMPR-II with the co-receptor, endoglin. This continuous signaling mediates normal Smad1/5/8 activity to maintain endothelial cell homeostasis. Center panel: Genetic reduction of functional ALK1, BMP9, BMP10, BMPR-II, endoglin, Smad4 or Smad8, exacerbated by one or more "second hits", critically reduces endothelial BMP9/BMP10 signaling and results in the pathological changes underlying the development of PAH. Right panel: Proposed mode of action of MGX292 (exogenous recombinant modified BMP9), leading to restored endothelial cell signaling via enhancement of BMPR-II protein levels and normalization of endothelial cell functions.

Despite the promise of BMP9 as a therapeutic in PAH, its potential for heterotopic ossification (HO), has traditionally been a major limitation. All BMPs are capable of driving a program of osteogenesis in mesenchymal tissues and native BMP9 also carries this risk. Native BMP9 signals at low concentrations via its high affinity type 1 receptor (ALK1), to preserve endothelial function. At higher concentrations, BMP9 can activate the low affinity type 1 receptor (ALK2), on mesenchymal cells. ALK2 is the archetypal receptor for driving bone formation and HO.

To unleash the full potential of BMP9 for PAH, we set out to develop protein engineered variants of native BMP9 that retain endothelial signaling via ALK1, but lack signaling via ALK2, which would otherwise lead to undesired bone formation. The design of single amino acid substitutions was based on a deep understanding of the structural basis of BMP signaling via type 1 and type 2 receptors. We screened a number of variants, and in 2019, ultimately selected MGX292 as its drug development candidate. Based on the design and supported by preclinical evidence, MGX292 is devoid of bone forming capacity while retaining the endothelial protection of the native protein. MGX292 has a molecular weight of approximately 90KDa and comprises a dimer of two growth factor domains and two prodomains, similar to the circulating form of native BMP9. In 2015, we showed in an article published in *Nature Medicine* that exogenous administration of native BMP9 could reverse established PAH in several rodent models of disease.

While PAH is the primary indication for MGX292, additional target disease indications with major unmet needs include acute respiratory distress syndrome (ARDS), hereditary hemorrhagic telangiectasia (HHT) and hepatopulmonary syndrome, for which there are no approved therapies. The underlying biology of the BMP9 plays a causal role in HHT (heterozygous mutations in ALK1 or the accessory receptor ENG), hepatopulmonary syndrome (dramatically reduced

levels of circulating BMP9) and ARDS (BMP9 levels reduced in patients with sepsis and BMP9 protects mice from lipopolysaccharide-induced lung injury).

Preclinical Data

In preclinical rat models of severe PAH, daily administration of MGX292 demonstrated a dose-dependent reversal of established lung vascular pathology. The Sugen-hypoxia protocol has become the most widely used rodent model of severe PAH because it more closely resembles human PAH, being a chronic model of severe disease leading to death from right heart failure. In addition, the lung pathology is characterized by the appearance of neointimal vascular lesions, which are an important feature in human PAH pathology, but not seen in most other rodent models. In human pulmonary artery endothelial cells, MGX292 has been observed in *in vitro* studies to activate downstream signaling in an ALK1 and BMPR2 dependent manner, with an EC_{50} similar to native BMP9.

In preclinical studies of the Sugen-hypoxia rat model, MGX292, given daily for four weeks, was observed to reverse established advanced pulmonary vascular remodeling at doses as low as 3-10µg/kg/day. Almost complete reversal of disease pathology is observed at 30µg/kg/day. MGX292 generally appears well-tolerated at the highest dose used to date, 270µg/kg/day for four weeks. The graph below shows that MGX292 reverses the number of neointimal lesions in the Sugen-hypoxia model, the lesion that characterizes human PAH pathology.

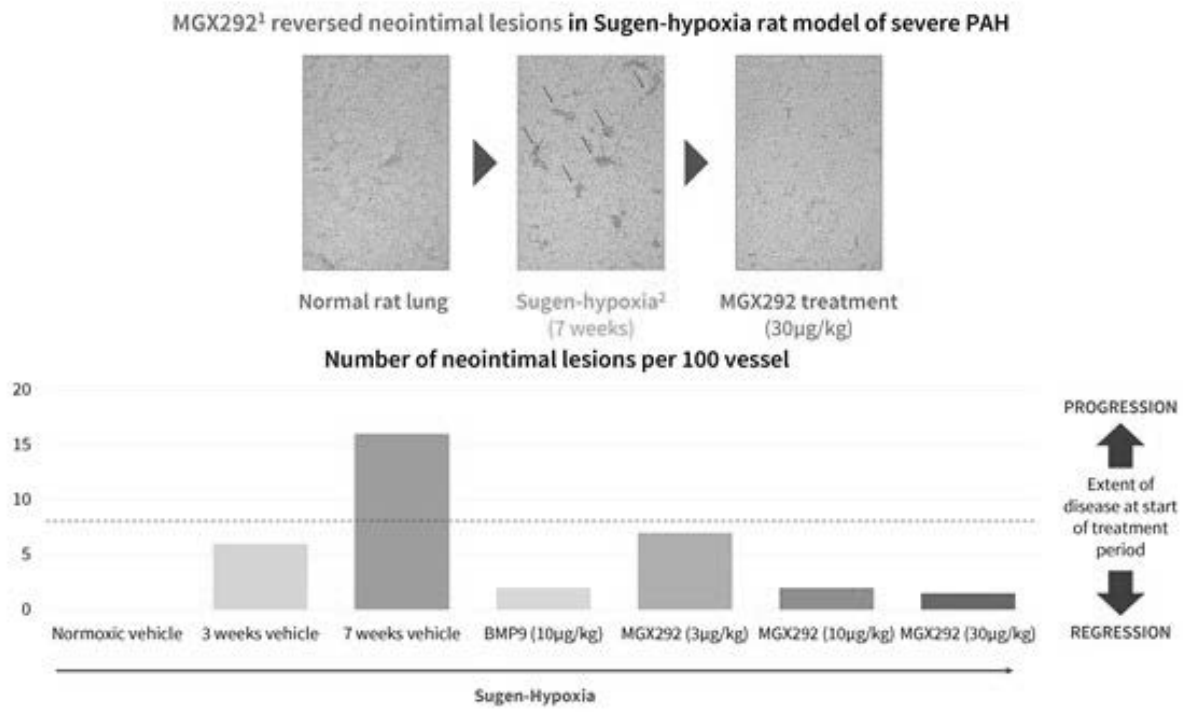


Figure 31: MGX292 reverses the number of neointimal lesions in the Sugen-hypoxia model, the lesion that characterizes human PAH pathology.

Development Plan

MGX292 is currently in preclinical development, in the IND-enabling stage. We expect to conduct a pre-IND meeting with the FDA in the second half of 2022 and to submit an IND in early 2023. In addition, while PAH is the primary indication for MGX292, we plan to explore opportunities in additional disease indications in which our technology may yield therapeutic benefit.

Oral and Intranasal OX2R Agonists for NT1

Summary

We are advancing an oral orexin agonist program for NT1, which we believe may offer improved tolerability and activity as compared to current therapies for NT1, as well as a novel orexin agonist approach for intranasal administration. Both programs are from our subsidiary Orexia Limited (Orexia).

We believe that introduction of orexin agonists as novel therapeutics will represent a disruptive approach in the treatment of NT1 because orexin agonists, unlike any current marketed treatments, have the potential to directly address the underlying pathology of the disorder, which is the profound loss of orexinergic neurons. Our exclusive collaboration with Sosei Heptares, a leading biopharmaceutical drug discovery and development company with proprietary structure-based drug design (SBDD) technology for G protein-coupled receptor (GPCR) targets, in the orexin agonist area provides access to unique structural biology technology coupled with SBDD, currently applied to the identification and optimization of molecules towards clinical candidates. The therapeutic potential for orexin agonists extends beyond NT1 into other rare primary hypersomnia disorders such as NT2 and idiopathic hypersomnia, and into a broad range of other indications characterized by excessive daytime sleepiness.

Disease Overview

Narcolepsy is a lifelong, chronic neurologic disorder that affects the brain's ability to regulate the normal sleep-wake cycle. Narcolepsy is a chronic rare and debilitating disorder that is estimated to affect over 150,000 people in the United States and over three million people worldwide. It is estimated that less than 50% of affected patients are diagnosed. Narcolepsy symptoms usually start between 7-25 years of age, and diagnostic delays of 8-12 years are common.

NT1 affects approximately 50% of all narcolepsy patients, and is characterized by a diverse set of symptoms that include excessive daytime sleepiness (EDS), sleep paralysis, hallucinations upon waking up or falling asleep, disturbed nighttime sleep, and cataplexy, a sudden transient loss of muscle tone usually triggered by strong emotions. Cataplexy events are characterized as 'partial cataplexy' which produce muscle weakness in particular areas of the body such as the face, neck, or limbs, or 'complete cataplexy' which results in a full body collapse. Even in the case of a full body collapse, the individual remains fully awake and aware of their surroundings but is unable to move. Cataplexy events usually resolve within several minutes, and the individual regains full control of their muscles. Impaired attention, vigilance, and ability to focus are also commonly reported as symptoms. For some individuals with NT1, related symptoms such as insomnia, weight gain, mood fluctuations and depression can have a significant debilitating impact on their lives. Narcolepsy can also occur without cataplexy which is referred to as NT2. The NT2 population is more heterogeneous than NT1 and is associated with partial loss of orexin in approximately 30% of individuals. Some individuals with NT2 progress over time to a diagnosis of NT1, with the onset of cataplexy and greater loss of orexin.

NT1 is caused by the profound loss of orexin-producing neurons. Orexin, also known as 'hypocretin', is a key regulator of wakefulness and rapid eye movement (REM) sleep, and has been implicated in metabolism, behavioral arousal, and mood. We believe orexin agonists have the potential to treat a wide range of neurological disorders characterized by excessive daytime sleepiness, which are inadequately treated today, most notably NT1.

Orexin-A and Orexin-B, or hypocretin-1 and hypocretin-2, are two closely related orexin peptides that regulate the sleep-wake cycle and they project, or connect, to many regions of the brain including areas that control feeding, learning and memory, emotion and attention, metabolism and the endocrine system. Orexin peptides activate two orexin receptors, the Orexin Receptor-1 (OXR1) and OXR2. The orexin receptors have different and complementary distributions in the brain, suggesting they have distinct physiological roles acting through different neuronal pathways. The orexin-producing neurons located in the hypothalamus project to multiple regions throughout the brain. Orexin neurons release the neuropeptides Orexin-A and Orexin-B, which activate orexin receptors. In NT1, the neurons that produce orexin are lost. Orexin agonists can potentially re-activate orexin receptors and restore orexin neurotransmission. Enhanced wakefulness has now been associated with OX2R agonist administration in individuals with NT1, in two clinical studies reported by Takeda, providing clinical validation of the orexin hypothesis.

Orexin agonists have long been sought as the first therapeutic intervention that will directly address the underlying disease pathology of NT1, with the potential to re-activate orexin receptors which remain in the brain in postsynaptic neurons even after the loss of the natural orexin, as shown in the figure below.

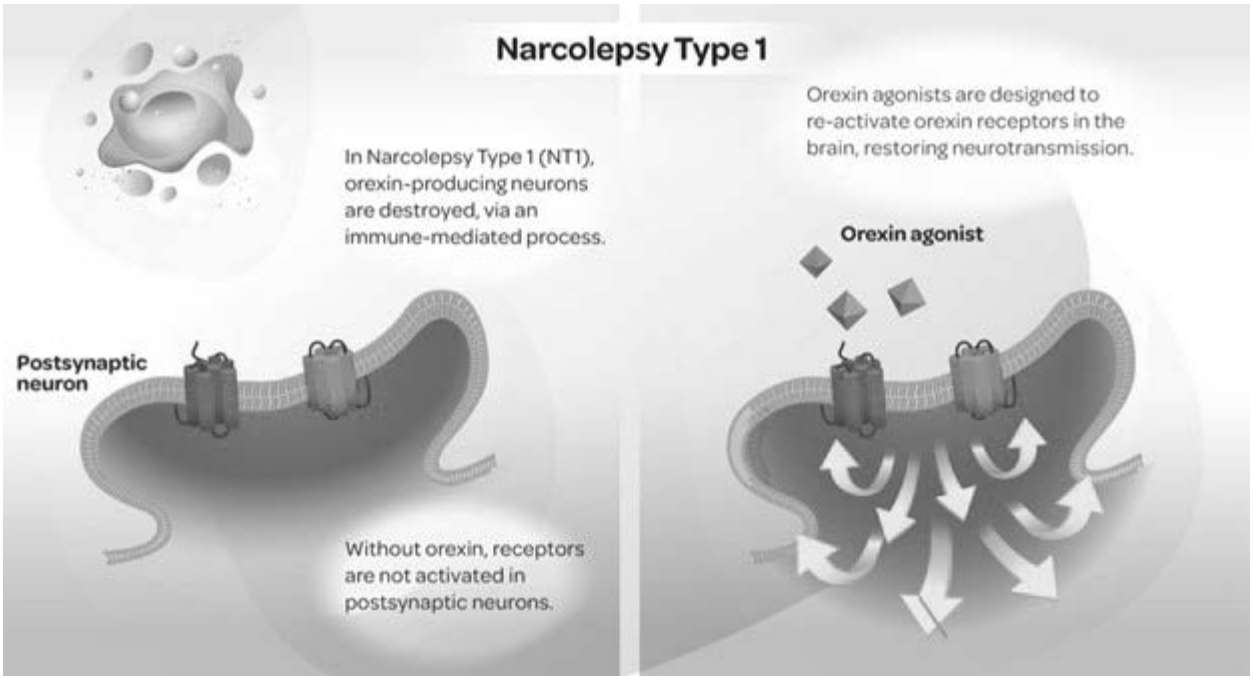


Figure 32: Schematic representation of the orexin neurotransmitter system.

Our orexin agonist program provides a potential 'replacement therapy approach' that could constitute a new paradigm in the treatment of NT1 by restoring orexin neurotransmission in the brain, and ultimately, addressing a broader range of NT1 symptoms than current therapies. Data from the first clinical studies evaluating an orexin agonist have been reported recently by Takeda, which demonstrated a statistically significant reduction of daytime sleepiness in individuals with NT1 and NT2, as well as enhanced wakefulness in sleep-deprived healthy adults. We believe these results suggest that orexin agonists may also have therapeutic potential in indications where patients are symptomatic despite normal orexin levels, or where there is only partial loss of orexin. We plan to explore orexin agonists in a wide range of disorders and neurodegenerative diseases, which may provide opportunities to address indications beyond NT1.

Competition and Market Opportunity

Sales for narcolepsy treatments in the U.S. totaled approximately $1.9 billion in 2020, a figure which is expected to grow through investments in physician education and patient awareness that may lead to earlier and increased diagnosis rates, the introduction of innovative therapies with improved safety and efficacy profiles, and population growth.

While prevailing treatment approaches may address the symptoms of NT1, there are no currently approved therapies that address the loss of orexin, which is the underlying pathophysiology of the disorder. For NT1, the current treatment paradigm typically involves a polypharmacy approach to address EDS and cataplexy. There are currently eight medications approved for treatment of narcolepsy in the US which include traditional stimulants, wake-promoting agents, sodium oxybate and an antagonist/inverse agonist at histamine 3 (H3) receptors.

Three of these medications are approved for treatment of EDS and/or cataplexy in narcolepsy: WAKIX® (pitolisant) marketed by Harmony Biosciences, XYREM® (sodium oxybate) marketed by Jazz Pharmaceuticals plc (Jazz), and XYWAV® (calcium oxybate; magnesium oxybate; potassium oxybate; sodium oxybate) also marketed by Jazz. Five additional medications are marketed for treatment of excessive sleepiness in narcolepsy: modafinil; armodafinil; methylphenidate; amphetamine salts; and SUNOSI® (solriamfetol) marketed by Jazz. All of these approved medications, except for WAKIX®, are scheduled as controlled substances. Other prescription drugs are used off-label for the treatment of either EDS or cataplexy in patients with narcolepsy, including stimulants for EDS and antidepressants for cataplexy. Some of the current therapies have significant side effects such as increased heart rate and blood pressure, or black box warnings due to the risk of respiratory depression, abuse and dependence, as well as the potential for rebound and withdrawal symptoms.

Despite the benefits of current treatments, these provide only moderate improvement in narcolepsy symptoms according to the American Academy of Sleep Medicine, and side effects may limit their use. Based on the overall benefit-risk assessment of current medications, the FDA Voice of the Patient report published in 2014 concluded that there is a

continued need for additional effective and tolerable treatment options for patients with narcolepsy, and we believe that this unmet need persists today to a similar extent due to the lack of medications that treat the underlying orexin deficiency in NT1.

XYREM® is a Schedule III controlled substance available only through a restricted access REMS program. Despite a black box warning, annual global sales for XYREM® and XYWAV® were approximately $1.8 billion in 2021. WAKIX® was approved in the U.S. in 2019 and is approved in certain European countries for treatment of narcolepsy (EDS and cataplexy), with total revenue of approximately $305 million for 2021.

There is another sodium oxybate candidate in development, FT218 from Avadel Pharmaceuticals plc (Avadel), currently undergoing NDA review by the FDA. There are also other orexin agonist approaches being investigated. Takeda is pursuing TAK-861 in Phase 1 clinical development after announcing its lead molecule in Phase 2, TAK-994, would not advance. Takeda has disclosed that they believe the toxicity observed with TAK-994 was an idiosyncratic molecule-specific effect and not a class effect. We are also aware of one orexin agonist program in Phase 1 clinical development, DSP-0187 being investigated by Sumitomo Dainippon Pharma Co., Ltd. (Sumitomo) and several other orexin agonist programs in preclinical development.

Our Product Candidates

We are progressing two orexin agonist programs, one for orally administered treatments and the other for intranasally administered molecules, as novel treatments for NT1 with the potential to establish a new global standard of care. Intranasal administration may provide an additional option for patients, offering increased convenience and possibly faster onset of action. Our lead molecules are designed to selectively target the Orexin Receptor-2 (OX2R). Both oral and intranasal programs have been based on structure-based drug design.

The orexin receptors are neuropeptidic GPCRs in the central nervous system and therefore represent a particularly challenging target for drug discovery. Indeed, one of the key challenges for a small molecule orexin agonist program is the design of a brain penetrant, highly potent and selective structure that can mimic the precise binding and activating properties of the native peptide, which is approximately seven-fold larger in size than the average small molecule drug.

We seek to unlock the potential of the OX2R via an advanced understanding of the receptor's structure through stabilization of the OX2R GPCR protein. GPCRs are inherently unstable proteins when isolated from the cell membrane. Structural and biophysical characterization of protein-drug interactions, however, requires the expression and often purification of stable protein with an appropriate structural conformation. Through a collaboration with Sosei Heptares, we have exclusive access to a stabilized OX2R GPCR protein, known as StaR®, which has enabled the determination of three-dimensional structures via X-ray crystallography, Cryo-EM and Biophysical Mapping™. This is achieved by engineering a small number of single point mutations outside of the ligand-binding site that enable the protein to retain its organized structure even after it has been removed from the cell membrane. The resulting stabilized StaR protein is more robust than the corresponding "wild-type", or unmutated protein and can be readily purified for use in a variety of hit discovery and biophysical approaches.

By leveraging the StaR protein, we have exclusive access to a number of high-resolution OX2R co-crystal structures with small molecules and peptides, as shown in the exemplar figures below, which have enabled the discovery and design of highly potent OX2R agonists through SBDD.

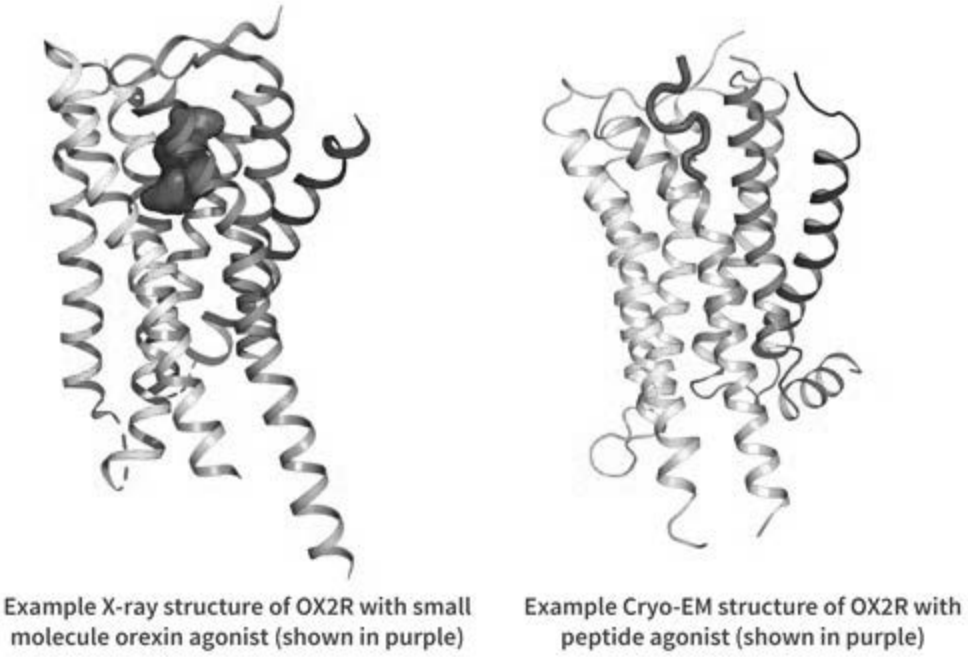


Figure 33: Example structures of OX2R agonists.

As part of discovery efforts to support future innovation, we also have a collaboration with X-Chem, a pioneer of DNA-encoded chemical library (DEL), technology, to leverage its DEL platform to discover small molecule leads by screening hundreds of billions of novel lead-like small molecule compounds simultaneously. The collaboration has resulted in the discovery of multiple novel hits, and it is the direct result of X-Chem screening its drug-like DNA-encoded libraries (DEX™) against the OX2R StaR® protein.

We also recently announced an exclusive collaboration with Schrödinger focused on the discovery of novel therapeutics targeting OX2R. Discovery efforts will focus on small molecules with differentiated clinical profiles to harness the broad potential of orexin agonism across different indications. The collaboration provides us with substantial access to Schrödinger's entire computational platform as well as Schrödinger's extensive expertise in ultra-large-scale deployment of its technology. We are leveraging Schrödinger's computational platform, including LiveDesign and Free Energy Perturbation (FEP+), which facilitates high-performance calculations for drug discovery to enable accurate prediction of potency at the target of interest. The collaboration is enabled by our structural biology capabilities, including the stabilized OX2R StaR® protein exclusively licensed from Sosei Heptares, and high-resolution crystal structures in agonist conformation. The collaboration represents the first time Schrödinger's technology is applied in an orexin agonist setting at scale enabled by our structural biology capabilities.

Preclinical Data

Our OX2R agonists are designed with the aim to maximize benefit for reduced excessive daytime sleepiness and cataplexy, as well as potential reduction of additional symptoms, in individuals with NT1. Both programs are now in advanced lead optimization phase, with compounds now being evaluated in preclinical mouse models of NT1. Progress and selected preclinical results for each series are described below.

Oral Program

We are in lead optimization phase with two oral lead series and have additional series under development. Our lead series are represented by exemplar small molecules, which were observed to have demonstrated agonist activity at the recombinant human OX2R overexpressed in CHO cells by calcium flux assay and IP1 accumulation assay, as shown in the figures below.

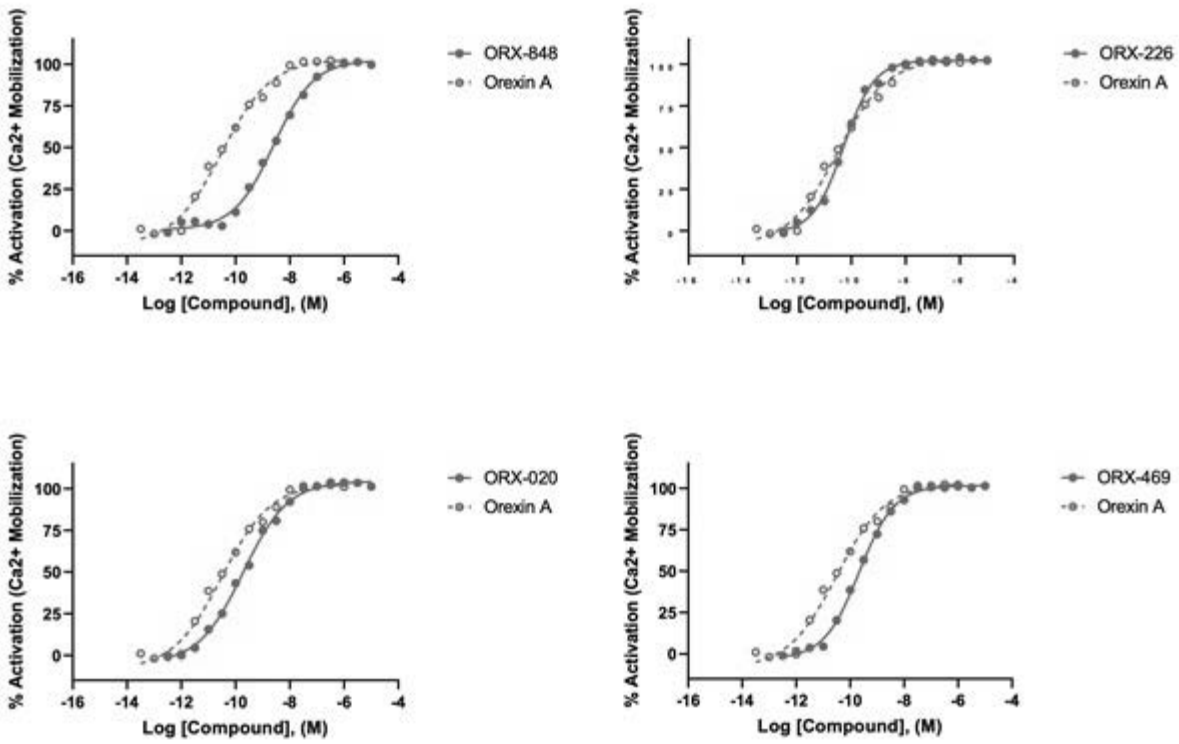


Figure 34: ***In vitro*** **functional profile of selected Exemplar Small Molecule agonists in a calcium mobilization FLIPR assay with cells expressing recombinant human OX2R. Agonist-stimulated calcium (Ca2+) mobilization activity was normalized to EC100 of the natural peptide Orexin-A (OX-A). All four exemplar small molecules were observed to behave as a potent full agonist relative to OX-A.**

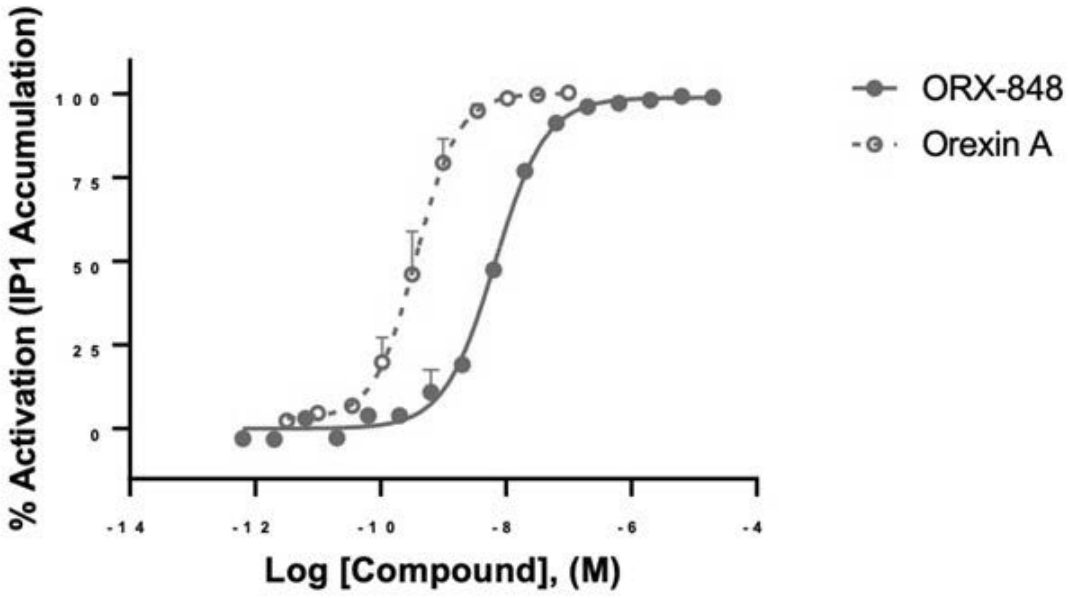


Figure 35: ***In vitro*** **OX2 IP1 accumulation activity profile for the Exemplar Small Molecule agonist ORX-848 in cells expressing recombinant human OX2R. Agonist-stimulated inositol-1-phosphate (IP1) accumulation activity was normalized to EC100 of the natural peptide Orexin-A (OX-A). ORX-848 was observed to behave as a potent full agonist relative to OX-A.**

In addition, the Exemplar Compound ORX-848 showed agonist activity at the native mouse OX2R, as assessed in brain slices containing the histaminergic neurons of the tuberomammillary nucleus (TMN). This is a primary target of orexin innervation that plays a central role in control of sleep/wake states and is modulated by activity at the OX2R.

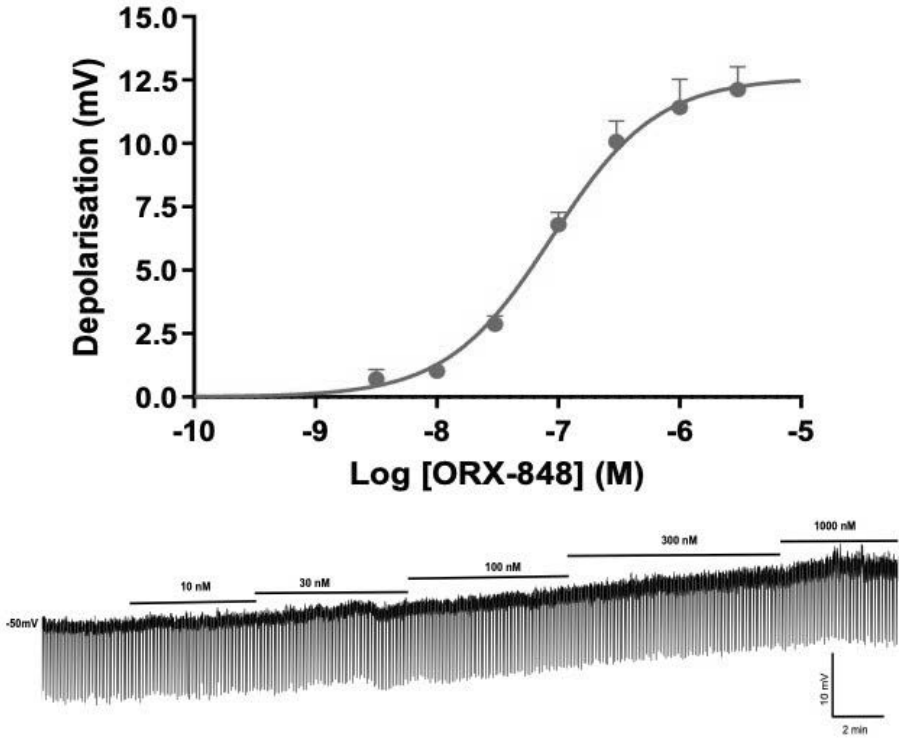


Figure 36: Whole cell current-clamp recordings for the Exemplar Small Molecule agonist ORX-848 in mouse brain slices showed agonist activity at the endogenous mouse OX2R. These electrophysiological recordings showed that ORX-848 depolarized histaminergic neurons of the tuberomammillary nucleus (TMN), a primary target of orexin innervation that plays a central role in control of sleep/wake states.

The exemplar small molecule also showed dose dependent effects in increasing wakefulness in wild-type mice, and in the orexin/ataxin-3 narcolepsy model in which mice lose ≥ 95% of their orexin-producing neurons, which are shown in the figure below. Sleep/wake was detected by piezoelectric monitoring, which is a rapid, non-invasive method for classifying sleep and wakefulness by unsupervised machine learning on physiologically relevant readouts, such as body movement and breath rate, with high correlation to conventional, time-intensive electroencephalogram (EEG) / electromyogram (EMG) readouts.

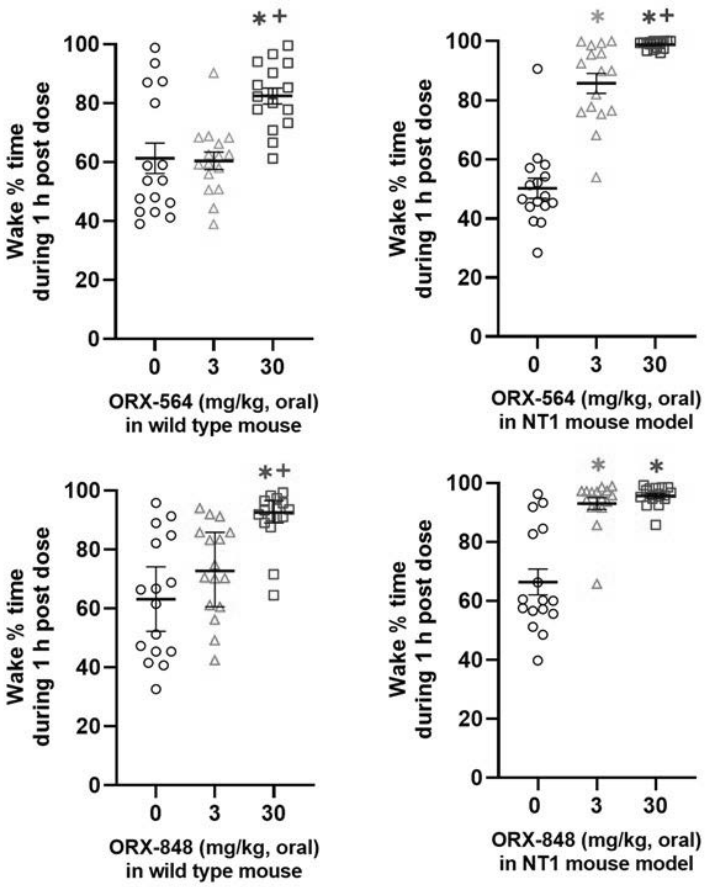


Figure 37: In vivo wake-promotion efficacy profile for two exemplar small molecule agonists. ORX-564 and ORX-848 significantly increased wakefulness in both the NT1 model mice (orexin/ataxin-3) and wild type colony mates. Compounds were administered orally at 0, 3, and 30 mg/kg, five hours after light onset. Wakefulness was detected by piezoelectric monitoring and found to increase in the first hour post dose (P < 0.05 vs. 0 mg/kg (*) or 3 mg/kg (+), Bonferroni-corrected contrasts following one-way repeated-measures analysis of variance.)

We are currently optimizing metabolic stability, CNS penetration, and efflux parameters to identify potent, selective OX2R agonists for oral administration with the desired pharmacokinetic and safety profile.

Intranasal Program

We are also in lead optimization phase with proprietary orexin agonist peptide series. The current focus is on profiling selective high-potency peptides to assess CNS penetration and develop methods to facilitate delivery of pharmacologically active doses to the nasal cavity in small dosing volumes. The in vitro profile of several exemplar peptide agonists is illustrated below. These peptides have been observed to show high affinity binding and potent agonist activity at the recombinant human OX2R, similar to the endogenous OXA peptide, as illustrated in the figure below. In part (A), the exemplar peptides showed high affinity binding at the OX2R with complete displacement of ^{125}I-OXA. The competitive binding profile is shown in cell membranes expressing recombinant human OX2R. Binding was calculated as a percent inhibition of the specific binding of radiolabeled orexin A peptide (^{125}I-OXA). In part (B), the exemplar peptides showed potent agonist activity in the IP1 accumulation assay in cells expressing recombinant human OX2R, and were observed to behave as a potent full agonists relative to OX-A. Agonist-stimulated inositol-1-phosphate (IP1) accumulation activity was normalized to the EC100 of the natural peptide Orexin-A (OX-A). In part (C), the exemplar peptides also behaved as potent, full agonists in a calcium mobilization functional FLIPR assay relative to OX-A. The assay was conducted in cells expressing recombinant human OX2R, and agonist-stimulated calcium (Ca2+) mobilization activity was normalized to EC100 of OX-A.

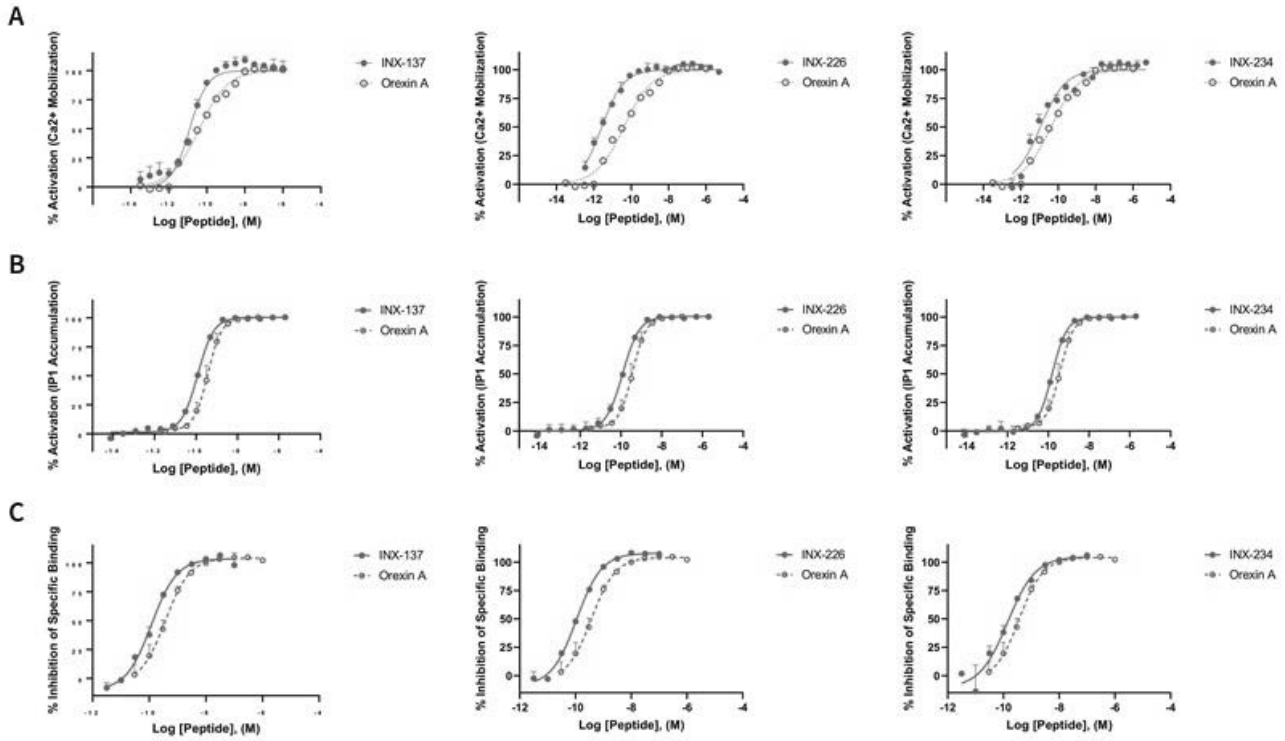


Figure 38: *In vitro* profiling of three Exemplar Peptide OX2R agonists, INX-137, INX-226, and INX-234.

Intracerebroventricular (ICV) drug administration consists of a direct injection of the drug into the brain. Several lead peptides were associated with increased wakefulness in wildtype mice when administered ICV, as shown in the figure below for an exemplar peptide. Sleep/wake was measured using the PiezoSleep assay, as described above.

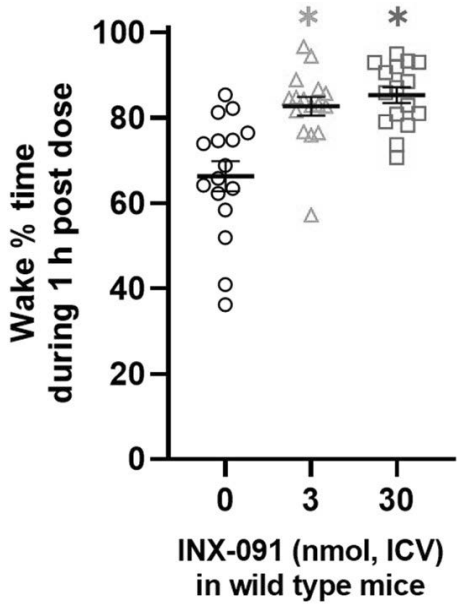


Figure 39: In vivo wake-promotion efficacy profile for Exemplar Peptide INX-091. INX-091 significantly increased wakefulness in wild type mice. The peptide was administered directly to brain by intracerebroventricular (ICV) injection at 0, 3, and 30 nmol, five hours after light onset to wild type mice. Wakefulness was detected by piezoelectric monitoring and found to increase in the first hour post dose ($P < 0.05$ vs. 0 nmol (*), Bonferroni-corrected contrasts following one-way repeated-measures analysis of variance).

Orexin agonist peptides are currently being evaluated in preclinical species using intranasal administration. Preliminary CMC work and formulation development is underway.

Development Plan

We continue to apply our structural biology technology, now in association with Schrödinger's computation platform, to provide further insights into the orexin receptor binding pocket in order to develop differentiated molecules which are designed to address a potential range of different target product profiles. We plan to submit INDs/CTAs for our lead programs in 2023, and we anticipate initiating clinical Phase 1 studies thereafter. We intend to explore additional indications beyond NT1 in which orexin agonism may yield therapeutical benefit.

Exploratory programs

CBS001 in Inflammatory / Fibrotic Diseases

Summary

We are developing CBS001, a neutralizing therapeutic mAb to the inflammatory membrane form of LIGHT (known as TNFSF14) for the treatment of inflammatory / fibrotic diseases. We have received authorization from the MHRA to start a Phase 1 clinical trial in healthy volunteers (planned to start in the second quarter of 2022). CBS001 is from our subsidiary Capella Bioscience Limited (Capella).

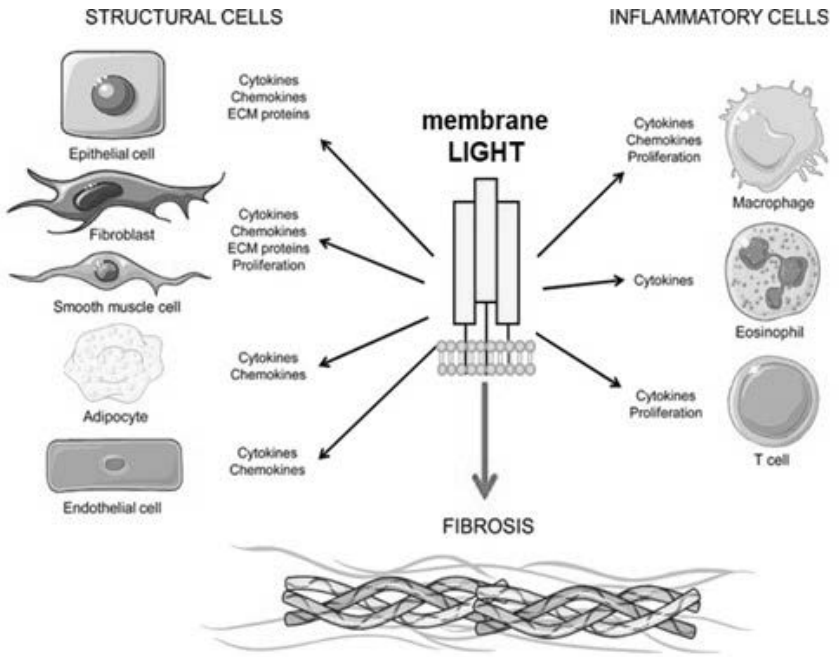


Figure 40: LIGHT can influence both structural and inflammatory cells to promote fibrosis.

The protein LIGHT has been found elevated in the serum or sputum of patients suffering from a number of inflammatory diseases with a fibrotic component, including asthma, atopic dermatitis, rheumatoid arthritis, non-alcoholic fatty liver disease, atherosclerosis and colitis. LIGHT can regulate infiltrating T cells, macrophages, and eosinophils, controlling their trafficking or retention in the inflamed tissue, their proliferation and their ability to produce cytokines that amplify fibrotic processes. Activation of the LIGHT signaling cascade therefore can lead to hyperplasia of lung epithelial cells, fibroblasts and smooth muscle cells, deposition of extracellular matrix proteins, vascular damage and further immune alterations that in concert constitute fibrosis. By signaling in tandem on inflammatory and structural cells, through lymphotoxin beta receptor (LTßR) and herpesvirus entry mediator (HVEM), LIGHT is able to control the expression of major pro-fibrotic factors such as TGF-ß, IL-13 and TSLP and these factors combined can subsequently regulate hyperplasia of fibroblasts, epithelial cells and smooth muscle cells, and promote deposition of extracellular matrix proteins such as collagen. Additionally, LIGHT can regulate accumulation of Th2 cells, chemokines that attract these and other

immune cells, adhesion molecules that will maintain the inflammatory environment and other factors such as metalloproteinases that can participate in the fibrotic response.

Our Product Candidate

CBS001 is designed to be a high-affinity mAb blocking the binding of the inflammatory membrane form of LIGHT to its signaling receptors, HVEM and LTßR. This mAb is differentiated from other anti-LIGHT mAbs, which bind soluble and membrane forms equally. The below graphic illustrates the differentiated epitope targeted by CBS001.

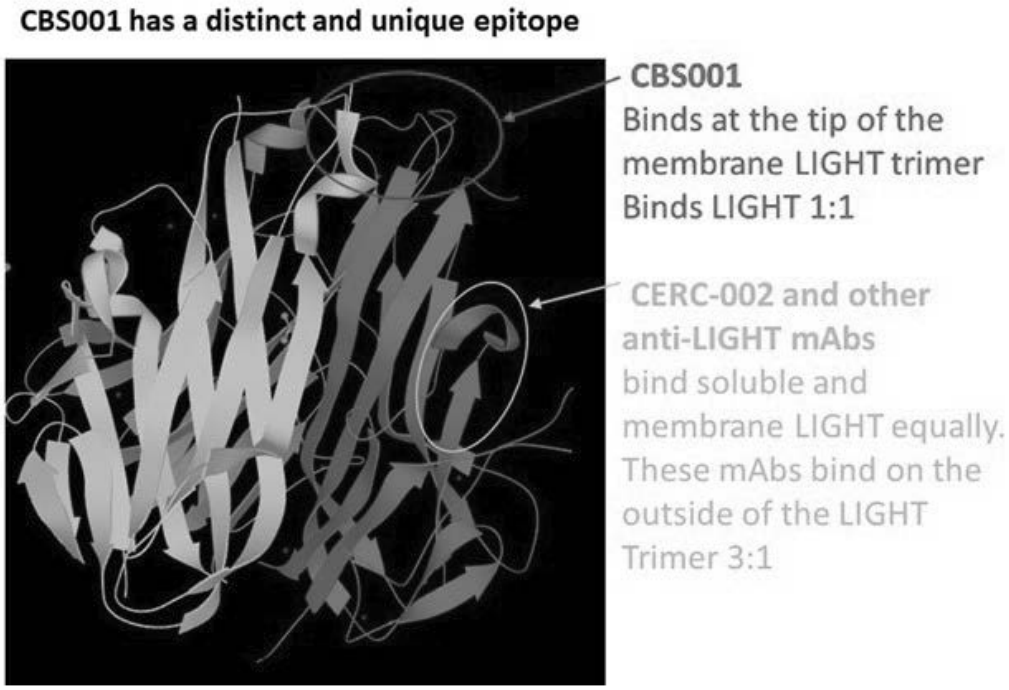


Figure 41: Binding epitope of CBS001

LIGHT is not present in normal lung tissue, which we believe provides the potential for CBS001 to be differentiated in its safety profile. Elevated levels of LIGHT have been found in the serum or sputum of patients suffering from a number of inflammatory diseases with a fibrotic component.

In preclinical testing, we have observed that CBS001 has a long half-life of approximately 25 days and robust potency. We believe these properties may support dosing once every one to two months.

Preclinical Data

We have tested CBS001 against all available anti-LIGHT mAbs in *in vitro* studies and CBS001 was observed to have greater potency (as measured by IC50) than the competitor antibodies and is ten times more potent than CERC-002. CBS001 inhibits binding of membrane LIGHT to HVEM and LTßR as well as showing high potency in inhibiting IL-8 release from a cell based assay expressing HVEM or LTßR.

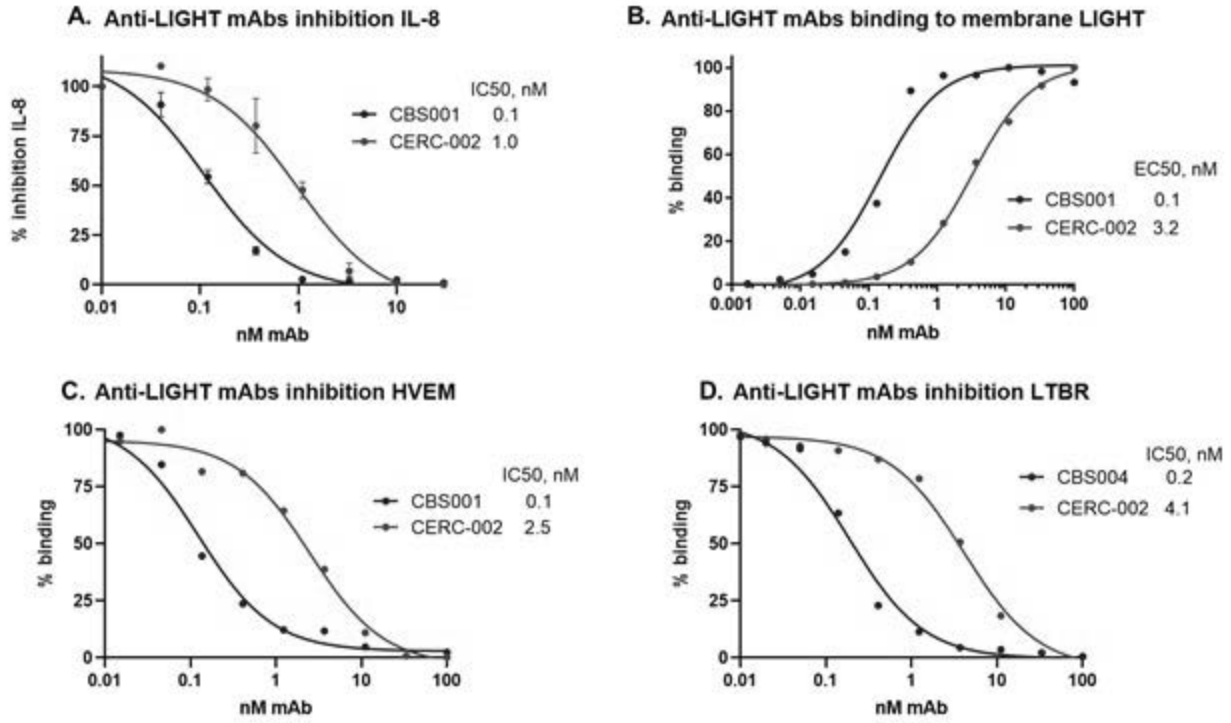


Figure 42: CBS001 potency in several assays.

The above figure demonstrates that CBS001 is 10-fold more potent than CERC-002 in a cell based IL-8 inhibition assay (A); and *in vitro* assays of (B) cell binding assay; (C) inhibition LIGHT-HVEM binding and (D) inhibition LIGHT-LTBR binding.

In addition, CBS001 does not compete with the natural LIGHT inhibitor DcR3 in binding excess LIGHT as do all other anti-LIGHT mAbs, which is due to the unique epitope of CBS001. CBS001 inhibits IFNg and the inflammatory cytokines TNF and IL-17 from activated T cells in primary cell assays. Importantly, LIGHT is also expressed on Th17 cells.

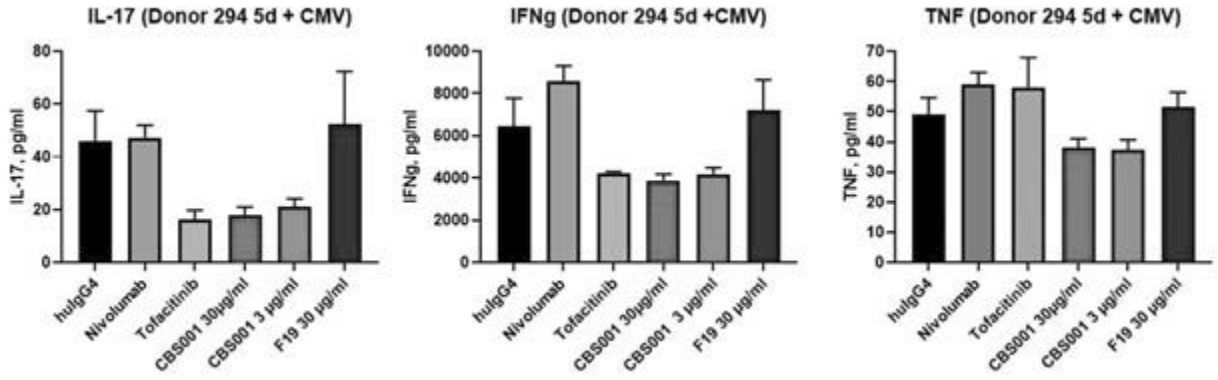


Figure 43: Activity of CBS001 on inhibition of IL-17, IFNg and TNF from CMV lysate stimulated PBMC over a five-day incubation period, against controls of nivolumab, tofacitinib and human IgG4.

Th17 cells have been demonstrated to play a role in the progression of autoimmune diseases, such as rheumatoid arthritis, psoriasis, multiple sclerosis and inflammatory bowel disease. The Th17 cytokines IL-17A and IL-17F trigger the production of pro-inflammatory cytokines in target tissues, which not only mediate inflammation through the recruitment of innate immune cells such as neutrophils, but also promote further Th17 activation in a positive feedback manner. This enhances the case that LIGHT through the downstream inhibition of IL-17 (among other mechanisms) offers pathway validation in the form of other approved agents neutralizing IL-17 as their mechanism of action.

In a preclinical model of lung fibrosis induced with bleomycin in humanized mice we have shown that CBS001 significantly reduces severe fibrosis as measured by Ashcroft score or fibrosis.

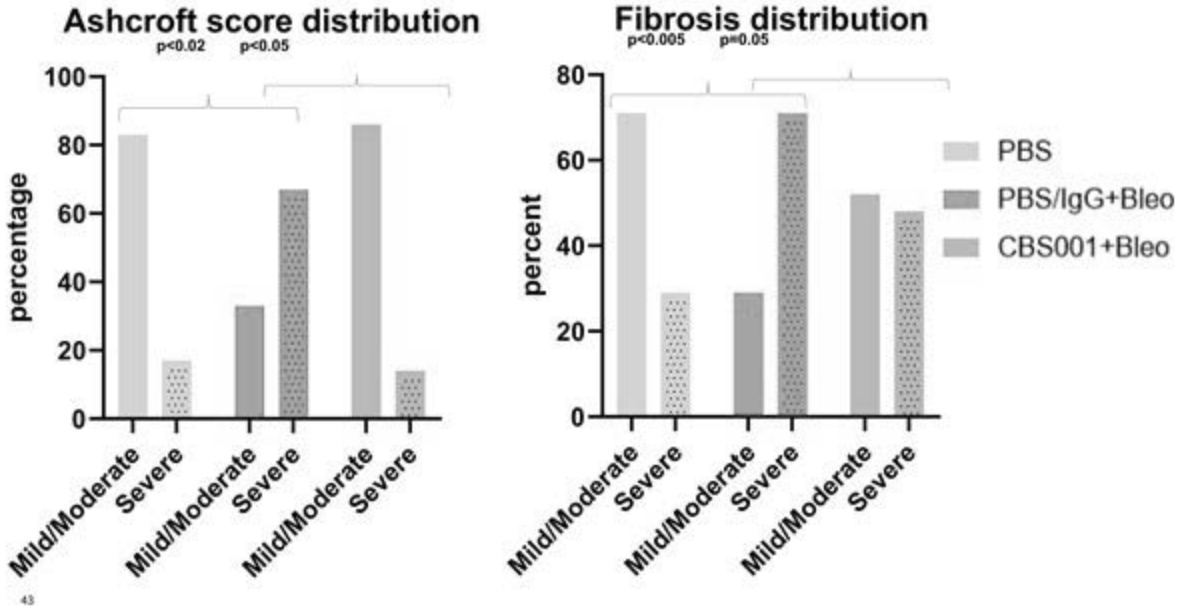


Figure 44: Reduction of fibrosis by CBS001.

In the above figure, humanized mice were treated with bleomycin at day 0 and the level of fibrosis was quantitated by immunohistochemistry on day 11 in the presence of CBS001 and compared to control IgG4 or PBS.

In human IPF lung tissue, we have shown high LIGHT expression co-expressed with CD4 and CD8 cells by immunohistochemistry in areas of inflammatory cell infiltration. LIGHT was also present on neutrophils and T effector memory cells in these sections. Importantly, no LIGHT expression was evident in normal lung. Studies in IPF have demonstrated the abundance of T and B lymphocytes and the presence of lymphocyte aggregates resembling lymphoid follicles in IPF and these structures correlate with disease progression.

Pharmacokinetic studies in non-human primates (NHP) have shown that CBS001 has an exceptionally long half-life of approximately 25 days, which we believe could support monthly or potentially bi-monthly dosing in human subjects.

GLP safety studies have been completed in NHP and human LIGHT KI mice and no safety issues have been observed as well.

CBS001 is a stable mAb that is expressed at high yield from the CMC expression system. An intravenous formulation will be evaluated in the Phase 1 clinical study.

Development Plan

We expect to commence a Phase 1 study in the second quarter of 2022. The primary aim of this study will be to assess the safety and tolerability of CBS001 treatment in healthy volunteers. Pharmacokinetics, pharmacodynamics, and immunogenicity of CBS001 treatment are expected to be evaluated.

CBS004 in SSc, SLE and Other Autoimmune Diseases

Summary

We are developing CBS004, a therapeutic mAb to target BDCA-2 for the treatment of lupus erythematosus, both systemic and cutaneous (SLE and CLE, respectively), systemic sclerosis (SSc), and other autoimmune diseases. We expect to submit an IND to the FDA in late 2022. CBS004 is from our subsidiary Capella.

Disease Overview

Systemic Sclerosis

SSc is a connective tissue disorder characterized primarily by the thickening and hardening of the skin. There are two primary types of scleroderma: localized and systemic, also known as systemic sclerosis. In localized scleroderma, the disease affects mainly the skin and may have an impact on the muscles and bones. In systemic scleroderma, there is an involvement of the internal organs, such as the digestive tract, heart, lungs and kidneys. The causes of SSc are not fully known. There is evidence that genetic and environmental factors may play a role in the genesis of scleroderma. The result is an activation of the immune system, causing blood vessel damage and injury to tissues that result in scar tissue formation and the accumulation of excess collagen. SSc is a rare disease and its prevalence varies with ethnicity, gender, and geographic area. Women are at higher risk than men. Systemic scleroderma can occur at any age; however, it is rare in children and the elderly. The disease is most prevalent in individuals aged 30-50 years.

In summary, SSc is a complex, multi-organ disease which has a high burden of patient morbidity. The mortality rate is increasing in the U.S. and Europe and generally, renal and lung changes are responsible for death in patients. Pulmonary hypertension leads to 12% of SSc–related deaths and lung fibrosis and heart changes are responsible for 9% of systemic sclerosis–related deaths.

Lupus Erythematosus

Lupus is associated with multisystemic inflammation resulting from abnormal immunological function. Patients experience periodic flares of varying severity or instances in which no observable signs or symptoms are present. SLE is a systemic autoimmune disease, with multisystemic involvement. The disease has several phenotypes, with varying clinical presentations in patients ranging from mild mucocutaneous manifestations to multi-organ and severe central nervous system involvement. SLE is a multifactorial disease with unknown exact etiology; however, several genetic, immunological, endocrine and environmental factors play a role in the etiopathogenesis of SLE. More than 50 genes or genomic loci have been identified to be associated with SLE, most encoding proteins implicated in the function of the immune system. The prevalence of the disease is approximately 70 per 100,000 persons and incidence rates of 5.6 per 100,000 person-years in primarily Caucasian and African-American populations, with African-Americans presenting the highest rates. SLE predominantly affects women of childbearing age.

Cutaneous manifestations are frequently the presenting sign of lupus erythematosus and in the case of certain CLE subtypes, they can occur in the absence of systemic disease. CLE is divided into several subtypes and is two to three times more frequent than SLE. Similar to proposed etiologies for SLE, current theories include genetic susceptibility, autoimmune induction and immune system damage.

It is critical for the immune system to avoid the recognition of self DNA and self RNA while retaining the ability to sense microbial nucleic acids. The innate immune system appears to have elaborated several distinct mechanisms to discriminate pathogen derived exogenous nucleic acids and host derived self-nucleic acids. However, there is considerable emerging evidence that recognition of self-nucleic acids by toll-like receptors (TLRs) located on plasma dendritic cells (pDCs) occurs under certain circumstances even though the innate immune system evolved distinct mechanisms to prevent self-recognition. The resulting chronically activated pDCs, and the IFNα that they produce in response to self-nucleic acids are thought to be a primary contributor in the pathogenesis of several autoimmune diseases, including SSc and SLE.

pDCs are bone marrow derived cells specialized in the secretion of type I IFN and are mainly found in peripheral blood and in primary and secondary lymphoid organs. pDCs promptly detect viral nucleic acids, which are endocytosed and delivered to endosomes containing TLR7 and TLR9. Engagement of these toll-like receptors results in the immediate release of type I IFN (IFN-I), providing a very early defense against viral infections. pDCs also secrete IFN-I in response to endogenous nucleic acids that are released during cell necrosis and/or apoptosis or are bound to antinuclear autoantibodies. pDCs secrete approximately 1,000 times more IFNα than any other cell type and are the primary source of this inflammatory mediator.

BDCA-2 is a C-type lectin exclusively expressed on the surface of human pDCs. BDCA-2 transmits intracellular signals through an associated transmembrane adaptor, the FceRIg, and induces a B-cell receptor-like signaling cascade which promotes the production of IFN-I and other chemicals, BDCA-2 receptor ligation by mAbs has been shown to inhibit TLR7-or TLR9-induced production of IFN-I and other pDC-derived pro-inflammatory mediators.

pDCs have been implicated in the development and progression of both SSc and SLE/CLE. pDCs infiltrate the skin of these patients and are chronically activated, leading to the secretion of IFNα and other inflammatory mediators that

are hallmarks of the disease. Several studies on IFN inducible chemokines in SSc and the report on CXCL4 as a biomarker of SSc build on the role of IFN in the progression and early phases of SSc as well as SLE/CLE. In fact, the IFN signature is present before the onset of clinical fibrosis and provides a strong rationale for the use of an anti-BDCA-2 treatment approach in SSc.

Importantly, the therapeutic potential of an anti-BDCA-2 antibody (BIIB059) has been observed in Phase 2 studies in SLE and CLE.

Competition and Market Opportunity

The global SSc market is mainly driven by the off-label use of drugs approved for its symptomatic indications, such as rheumatoid arthritis. Lack of curative therapies and high prevalence of off-label drug use are underlying factors spurring interest in this rare disease market. The global SSc therapeutics market size was valued at approximately $1.6 billion in 2018 and is estimated to expand at a compound annual growth rate of 6.0% from 2019 to 2026.

With respect to drug class, the SSc market is segmented into immunosuppressors, phosphodiesterase 5 inhibitors, endothelin receptor antagonists, prostacyclin analogues, calcium channel blockers, analgesics and others. Without a curative therapy for this disease, an expansive range of drug classes are prescribed to provide symptomatic relief, with immunosuppressants holding prominence. Therapies include OFEV® (nintedanib), marketed by Boehringer Ingelheim International GmbH (Boehringer Ingelheim).

The global SLE market size is expected to reach approximately $3.1 billion by 2025, representing a CAGR of 7.0%. A competitor anti-BDCA-2 mAb (BIIB059 being developed by Biogen) has shown promise in Phase 2 clinical trials for both SLE and CLE. Another pDc targeting mAb VIB7734 is in development by Horizon Therapeutics plc (Horizon) as a pDC-depleting agent, currently in Phase 2 clinical development. In a Phase 1b trial, CLE patients treated with VIB7734 were observed to have clinically significant improvements in extent and severity of skin lesions. Additionally, AstraZeneca is marketing SAPHNELO®, anifrolumab, an anti-type I interferon receptor subunit 1 antibody that was recently approved by the FDA for moderate to severe SLE. BENLYSTA® (belimumab) is a human monoclonal antibody developed by GlaxoSmithKline plc (GSK) which binds to B cell activating factory. BENLYSTA® was approved to treat lupus in 2011 and is the first drug approved for this disease in the last 50 years. In 2020, BENLYSTA® was approved for the treatment of lupus nephritis.

New therapies are needed for those patients who only see marginal benefit with BENLYSTA® treatment, and the SLE market remains open for future competition.

Our Product Candidate

CBS004 is our preclinical humanized IgG1 monoclonal antibody targeting the pDC-specific cell surface protein BDCA-2. By targeting BDCA-2, CBS004 inhibits intracellular signaling through an associated transmembrane adaptor, the FceRIg, and subsequently inhibits TLR7- or TLR9-induced production of IFN-I and other pDC-derived pro-inflammatory mediators.

CBS004 is a stable mAb and can be formulated for intravenous and/or subcutaneous administration. We believe that the long half-life of CBS004 in NHP of approximately 16 days supports a once-a-month dosing schedule at the minimum. We are seeking to develop CBS004 for treatment of lupus erythematosus, systemic sclerosis and other autoimmune diseases.

Preclinical Data

We have evaluated the effects of antibody-mediated BDCA2 internalization in preclinical models of pDC driven skin inflammation and fibrosis *in vitro* and *in vivo*. First, we developed a humanized monoclonal IgG1 antibody, CBS004, which specifically binds to BDCA2 with high affinity without hindering cell viability. CBS004 suppressed Toll-like Receptor (TLR)-9 induced IFNα secretion by peripheral blood mononuclear cell (PBMC) from both healthy volunteers and SSc patients. Additionally, CBS004 completely reversed TLR-signaling induced transcriptome of pDC, including activation of JAK/STAT, IL-6 and NF-kB pathways. Consistent with these findings, supernatants from TLR-stimulated human pDC treated with CBS004 failed to induce IFN stimulated gene expression in human keratinocytes and fibroblasts from organotypic 3D human skin cultures. We have generated data in two *in vivo* models in mice with CBS004. Firstly, a CLE like model, in which human pDC are injected into an immunocompromised mouse combined with topical Aldara (which acts as an immune response modifier) and secondly, a skin fibrosis model (human pDC plus bleomycin). In both of these models CBS004 decreased disease burden to control levels, indicating that CBS004 is a viable therapeutic approach for targeting both CLE and tissue fibrosis in SSc.

CBS004 appears to inhibit TLR9 induced IFN from pDC derived from healthy controls and SSc patients.

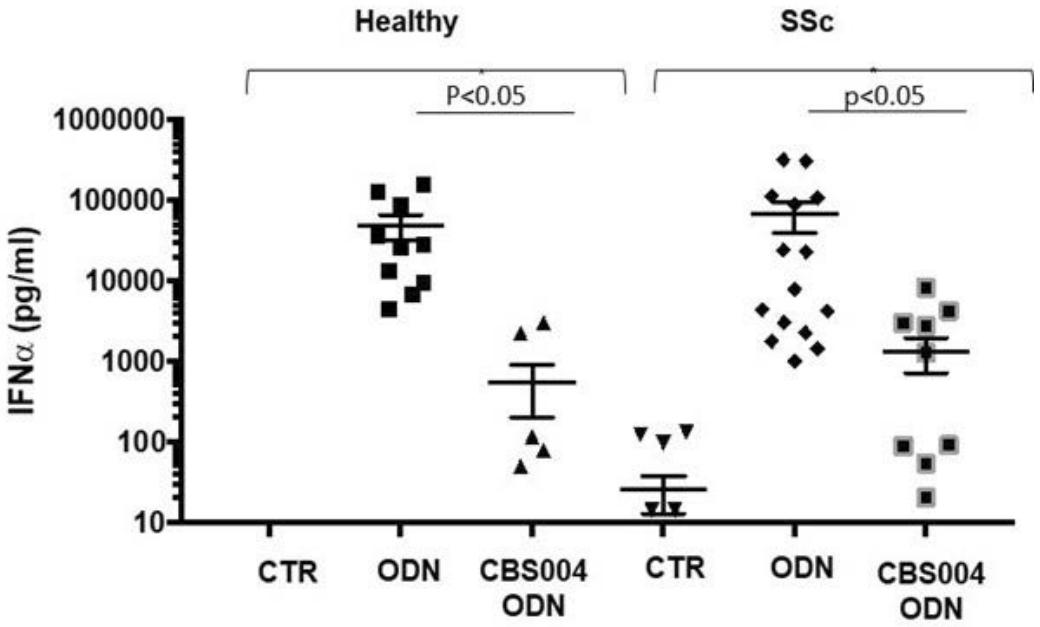


Figure 45: Activity of CBS004 on IFNα release.

The figure above illustrates PBMC from healthy or SSc patients, incubated overnight at 37C with 1uM ODN, a TLR9 agonist, in the absence or presence of CBS004 at the 10ug/ml concentration, with IFNα release measured by ELISA.

We are the first to demonstrate that pDC enhanced skin fibrosis in a bleomycin induced mouse model and we have shown that CBS004 reduced dermal and epidermal skin thickness induced by pDC back to control levels. In addition, CBS004 inhibited collagen accumulation and TGFß message. Transforming growth factor-ß (TGFß) is the primary factor that drives fibrosis and is often called the master regulator of fibrosis.

Mouse model of pDC induced fibrosis

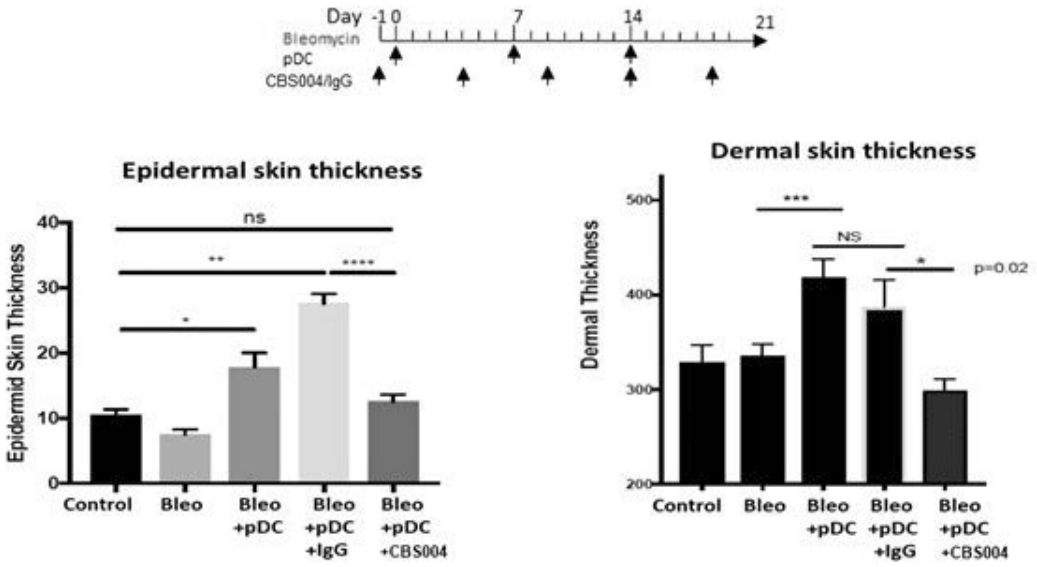


Figure 46: CBS004 significantly reduced skin thickness induced by pDC and bleomycin back to control levels.

In the above figures, severe combined immunodeficient mice were utilized between four to eight weeks of age. Bleomycin at 200 μg/ml in PBS was injected subcutaneously into a single location on the shaved back of mice once every other day for 3 weeks. Mice received 2.5 x10^5 human pDC i.v. on day 0, 7 and 14 following the first bleomycin injection. CBS004 or human IgG control (5mg/kg) were injected i.p. every 5 days starting 24 hours prior to the first bleomycin injection. Treated skin was collected using a 3 mm punch biopsy and processed for haematoxylin and eosin and masson trichrome staining. 20 areas of epidermis and dermal thickness were measured in order to obtain a large representation of skin thickness changes with different treatment regimens in the skin fibrosis model. An additional punch biopsy was taken and used to extract protein. These readings were then averaged and determined that CBS004 reduced both dermal and epidermal changes back to control levels.

NHP studies have shown that CBS004 has a half-life of approximately 16 days and caused internalization of BDCA-2 for up to 35 days.

Development Plan

We are planning to submit an IND to the FDA in late 2022. We expect to evaluate the safety, tolerability, pharmacokinetics, pharmacodynamics, and immunogenicity of CBS004 treatment in a Phase 1 clinical trial.

Our Strategy

We have embarked on a journey to build a sustainable pharmaceutical company with a reimagined drug discovery approach that we believe has the potential to fundamentally reshape the traditional R&D model. We believe our highly experienced management team and leading subject matter experts, guided by a relentless focus on data-driven decision-making and capital efficiency, are well positioned to lead the advancement of our robust portfolio of assets in areas of high unmet need. With that in mind, we intend to continue to establish proof of concept and proof of mechanism for our current preclinical programs and continue to generate clinical data as we advance our portfolio through later-stage development.

Corporate Information

Centessa is registered with the Registrar of Companies in England and Wales under number 12973576, and our registered office is at 3rd Floor, 1 Ashley Road, Altrincham, Cheshire, United Kingdom, WA14 2DT. Our website address is http://www.centessa.com. The information contained on, or that can be accessed through, our website is not incorporated by reference in this annual report on Form 10-K.

Palladio Biosciences was incorporated in 2015 under the laws of Delaware with primary operations in Horsham, Pennsylvania. ApcinteX was incorporated in 2014 under the laws of England and Wales with primary operations in the United Kingdom. Z Factor was incorporated in 2014 under the laws of England and Wales with primary operations in the United Kingdom. Morphogen-IX was incorporated in 2015 under the laws of England and Wales with primary operations in the United Kingdom. Capella Bioscience was incorporated in 2014 under the laws of England and Wales with primary operations in the United Kingdom. LockBody was incorporated in 2017 under the laws of England and Wales with primary operations in the United Kingdom. Orexia was incorporated in 2018 under the laws of England and Wales with primary operations in the United Kingdom. Pega-One was incorporated in 2019 under the laws of France with primary operations out of Princeton, New Jersey. Janpix was incorporated in 2013 under the law of England and Wales with primary operations in Canada. PearlRiver Bio was incorporated in 2019 under the laws of Germany with primary operations out of Germany.

Competition

The biotechnology and pharmaceutical industries are characterized by the rapid evolution of technologies and understanding of disease etiology, intense competition and a strong emphasis on intellectual property. We believe that our differentiated business model, approach, scientific capabilities, know-how and experience provide us with competitive advantages. However, we face, and will continue to face, competition from companies focused on more traditional therapeutic modalities. We expect substantial competition from multiple sources, including major pharmaceutical, specialty pharmaceutical, and existing or emerging biotechnology companies, academic research institutions, governmental agencies and public and private research institutions worldwide. Many of our competitors, either alone or through collaborations, have significantly greater financial resources and expertise in research and development, manufacturing, preclinical testing, conducting clinical trials, obtaining regulatory approvals and marketing approved products than we do. Smaller or early-stage companies may also prove to be significant competitors, particularly through collaborative arrangements with large

and established companies. These companies also compete with us in recruiting and retaining qualified scientific and management personnel, establishing clinical trial sites and recruiting patients in clinical trials, as well as in acquiring technologies complementary to, or necessary for, our programs. As a result, our competitors may discover, develop, license or commercialize products before or more successfully than we do. The key competitors for our programs are described in the respective sections.

We also face significant competition in seeking appropriate strategic partners and licensing and acquisition opportunities, and the negotiation process is time-consuming and complex. As a result, we may not be successful in our efforts in building a pipeline of product candidates through acquisitions, licensing or through internal development or in progressing these product candidates through clinical development. Although our research and development efforts to date have resulted in the identification, discovery and preclinical and clinical development of certain product candidates, these product candidates may not be safe or effective as therapies, and we may not be able to develop, in-license or otherwise acquire any other product candidates.

Manufacturing

We do not own or operate, and currently have no plans to establish, any manufacturing facilities. We currently depend on third-party contract manufacturing organizations ("CMOs"), for all of our requirements of raw materials, drug substance and drug product for our preclinical research and our ongoing clinical trials of our product candidates. Other than as discussed below, most of our subsidiaries have not entered into long-term agreements with our current CMOs. We generally intend to continue to rely on CMOs for later-stage development and commercialization of our product candidates, including any additional product candidates that we may identify. Although we rely on CMOs, we have personnel and third-party consultants with extensive manufacturing experience to oversee the relationships with our CMOs and are not overly dependent on a single CMO.

Sales and Marketing

We intend to begin building a commercial infrastructure in the United States and selected other territories to support the commercialization of each of our product candidates when we believe a regulatory approval in a particular territory is likely. We intend to conduct market research in connection with designing our commercialization strategy for each of our product candidates, which strategy may depend on the size and geographic dispersion of the target patient population and the characteristics of the prescribing audience for our products, if approved. For example, certain of our product candidates that target diseases with a limited patient population, a concentrated prescribing audience and a small number of key opinion leaders who influence the treatments prescribed for the relevant patient population, we may address each such market using our own targeted, specialty sales and marketing organization supported by internal sales personnel, an internal marketing group and distribution support. For other product candidates, we may establish a larger and more dispersed salesforce, or seek strategic collaborations to support our commercialization efforts.

We intend to evaluate our commercialization strategy as we advance each product candidate through clinical development. In any core markets outside of the United States that we may identify, where appropriate, we may utilize strategic partners, distributors or contract sales forces to expand the commercial availability of our product candidates.

Intellectual Property and License Agreements

We strive to protect the proprietary technology that we believe is important to our business, including seeking and maintaining patents and patent applications intended to cover our product candidates and compositions, their methods of use and processes for their manufacture, and any other aspects of inventions that are commercially important to the development of our business. We have entered into various license agreements to obtain the rights to use certain patents for the development and commercialization of our product candidates. As described below, we also rely on trade secrets to protect aspects of our business that are not amenable to, or that we do not consider appropriate for, patent protection.

Our success will depend on our ability to obtain and maintain patent and other proprietary rights protecting our commercially important technology, inventions and know-how related to our business, defend and enforce our current and future issued patents, if any, preserve the confidentiality of our trade secrets and operate without infringing the valid and enforceable patents and proprietary rights of third parties. We also rely on know-how, continuing technological innovation and potential in-licensing opportunities to develop and maintain our intellectual property portfolio. We seek to obtain domestic and international patent protection, and endeavor to promptly file patent applications for new commercially valuable inventions.

The patent positions of biopharmaceutical companies like us are generally uncertain and involve complex legal, scientific and factual questions. In addition, the coverage claimed in a patent application can be significantly reduced before the patent is issued, and patent scope can be reinterpreted by the courts after issuance. Moreover, many jurisdictions permit third parties to challenge issued patents in administrative proceedings, which may result in further narrowing or even cancellation of patent claims. We cannot predict whether the patent applications we are currently pursuing will issue as patents in any particular jurisdiction or whether the claims of any patents, if issued, will provide sufficient protection from competitors.

Because patent applications in the United States and certain other jurisdictions are maintained in secrecy for 18 months or potentially even longer, and since publication of discoveries in the scientific or patent literature often lags behind actual discoveries, we cannot be certain of the priority of inventions covered by pending patent applications. Moreover, we may have to participate in interference proceedings or derivation proceedings declared by the United States Patent and Trademark Office ("USPTO") to determine priority of invention.

Palladio

As of December 31, 2021, Palladio owns two pending U.S. patent application and six pending foreign applications in Japan, Europe, Australia, Canada, Mexico and Korea. Palladio's patent portfolio includes claims directed to methods of treatment with lixivaptan. On February 8, 2022, the U.S. Patent and Trademark Office issued a patent entitled "Formulations of Lixivaptan for the Treatment of Polycystic Disease," which has claims drawn to using a divided dose regimen of lixivaptan in treating ADPKD. The patent term expires June 8, 2038, before consideration of any applicable patent term extensions or adjustments and assuming payment of all appropriate maintenance, renewal, annuity, or other governmental fees. Palladio has rights to one issued U.S. patent, which is expected to expire in 2030, without considering any possible patent term adjustments or extensions and assuming payment of all appropriate maintenance, renewal, annuity, or other governmental fees.

In July 2016, Palladio acquired Cardiokine, Inc. from Chiesi USA, Inc. (Chiesi). In connection with the acquisition, Palladio acquired a license from Wyeth (now Pfizer) for lixivaptan and inherited certain historical contingent payment obligations (see below "*Payments due to certain former Cardiokine stakeholders"*) and agreed to make certain contingent consideration payments to Chiesi (see below "*Payments due to Chiesi"*). Palladio subsequently acquired the rights due to certain (but not all) former Cardiokine stakeholders, reducing the contingent future obligations (the "*Repurchased Rights*"). See "Management's Discussion and Analysis of Financial Condition and Results of Operations of The Centessa Predecessor Group and Certain Other Acquired Entities — Licensing Arrangements — Palladio License Agreement" for more information.

Payments due to Chiesi

The terms of the Cardiokine acquisition from Chiesi included certain contingent consideration payments which would be due to Chiesi in the event a Licensed Product is commercialized. Such payments are structured as a tiered percentage of net sales with aggregate annual payment to Chiesi capped at $32.5 million.

Payments due to certain former Cardiokine stakeholders

There are certain consideration payments previously agreed with Cardiokine stakeholders that were inherited by Palladio when it acquired Cardiokine and such payment obligations remain and would be due in the event the payment criteria are met. These comprise sales based milestones and royalty payments, including sales based milestones to former stakeholders of up to $16.3 million and low single digit royalty payments (the first $19 million of which would be due to Pfizer). In all cases these amounts take into account the effect of the Repurchased Rights.

In the event Palladio sublicenses the ex-US rights to the Licensed Product to third parties, Palladio is further obligated to share any up-front payments and royalties it earns from such ex-US sublicenses, subject to certain caps, with the former Cardiokine stakeholders. Certain other obligations arise if Palladio develops the Licensed Product for indications other than ADPKD.

ApcinteX

As of December 31, 2021, ApcinteX has a license to two issued U.S. patents, 49 issued foreign patents, e.g., France, Germany, UK and China issued foreign patents, and three pending foreign patent applications. ApcinteX's licensed patent portfolio includes issued U.S. patents and issued foreign patents, including patents in Europe, China, Japan, and Australia, which have claims directed to SerpinPC composition of matter, compositions of matter of other serpin variants,

and method of use of SerpinPC. The issued patents expire in 2034, and the pending patent applications, if issued, are expected to expire in 2034, without taking into account any possible patent term adjustments or extensions and assuming payment of all appropriate maintenance, renewal, annuity, or other governmental fees. See "Management's Discussion and Analysis of Financial Condition and Results of Operations of The Centessa Predecessor Group and Certain Other Acquired Entities — Licensing Arrangements — ApcinteX License Agreement" for more information.

Pega-One

As of December 31, 2021, Pega-One has a license to 13 issued U.S. patents, 130 issued foreign patents, one pending U.S. application, and three pending foreign patent applications. The issued U.S. and issued foreign patents, including patents in China and Japan, include claims directed to imgatuzumab (GA201) composition of matter and methods of use of imgatuzumab. The issued patents expire between 2022 and 2028, which do not include any possible patent term extension.

On January 2, 2020, Pega-One entered into a license agreement with F. Hoffman-La Roche Ltd. and Hoffman-La Roche Inc. (together, Roche), regarding the glycoengineered, anti-EGFR monoclonal antibody known as imgatuzumab. Under the license agreement, Roche granted Pega-One an exclusive (even as to Roche), worldwide, royalty-bearing, sublicensable (subject to certain requirements) license under certain patent rights and know-how (including Roche's interest in any joint patent rights or know-how) owned and controlled by Roche related to imgatuzumab and glycoengineering technology, to research, develop, make, and sell products containing imgatuzumab (Licensed Products), in all indications and uses in humans excluding diagnostic uses, or Field. Roche retains the right to use imgatuzumab for internal research purposes, subject to certain notice requirements prior to Roche starting any in vivo experiments. Any new patent rights or know-how resulting from Roche's research will be automatically included in Roche's license to Pega-One. Roche granted Pega-One an option to license any additional Roche inventions.

Roche also granted to Pega-One an exclusive (even as to Roche) sublicense of the worldwide rights licensed to Roche under its umbrella research and license agreement with Lonza Sales AG, solely to develop, make, and commercialize imgatuzumab and Licensed Products in the Field. To the extent needed, Roche agrees to negotiate a non-exclusive, worldwide, royalty-free license to additional patent rights related to immunotherapy or small molecules in multiple oncolytic indications. Roche also sublicensed to Pega-One certain intellectual property rights related to a proprietary cell line to perform assays using imgatuzumab.

If Pega-One intends to enter into certain strategic transactions, either involving an acquisition or other change of control of Pega-One or the grant of rights by Pega-One to a third party, to develop and commercialize imgatuzumab or a Licensed Product in certain specified territories, Roche has an exclusive right of first negotiation to enter into the applicable strategic transaction with Pega-One. In connection with the Reorganization, Pega-One and Roche entered into a waiver, pursuant to which the parties acknowledged that the Reorganization would constitute a change of control transaction and Roche agreed not to exercise its right of first negotiation. Notwithstanding such waiver, Roche's right of first negotiation would continue to apply for the period commencing on the completion of Centessa's acquisition of Pega-One until the earlier of the third anniversary of such acquisition, or until the first change of control of Pega-One following such acquisition.

In the future, if Pega-One files for an initial public offering, while maintaining control over the licensed imgatuzumab intellectual property, Roche is entitled to receive, immediately prior to the completion of the initial public offering, ownership of Pega-One common stock equivalent to a specified percentage of Pega-One on a fully diluted basis, depending on how much capital Pega-One has raised prior to such public offering. The completion of this Offering will not trigger the issuance of additional equity to Roche under this agreement.

Pega-One must use commercially reasonable efforts to develop and commercialize the imgatuzumab Licensed Product in the Field worldwide. Pega-One is solely responsible for the conduct of such activities relating to the Licensed Product worldwide in the Field at its own expense.

Roche granted to Pega-One a sublicensable right of reference to Roche's regulatory filings relating to imgatuzumab or a Licensed Product, including the right to rely upon and a right to copy, access, and otherwise use, all information and data relating to Licensed Product filed with any regulatory agency responsible for granting authorization to market such products (including all underlying raw data, CMC information, and other regulatory documentation).

Pega-One and Roche will each own any inventions conceived or reduced to practice by its employees, except that Roche will own any improvements to Roche's glycoengineering technology. Any inventions jointly conceived or reduced

to practice by employees of both parties will be owned jointly by the parties. Roche controls the prosecution and maintenance of those licensed patent rights relating to imgatuzumab at Pega-One's expense and those relating to Roche's glycoengineering technology at Roche's expense. Pega-One controls the prosecution and maintenance of patent rights relating to its own inventions and the jointly-owned patent rights. Each party will inform each other on a regular basis on the status of the patent rights for which it controls prosecution and maintenance, including the formation from time to time of a patent coordination team. Each party must advise the other party prior to abandoning any applicable patent rights and assign such patent rights to the other party if the other party wishes to continue prosecution and maintenance at its own expense. If Roche decides not to prosecute or maintain a licensed patent, at Pega-One's request, Roche will assign to Pega-One (at no cost to Roche) such patent in such country or countries in the territory. Such patent rights so assigned from Roche to Pega-One will no longer be subject to royalty payments. Pega-One has the first right to enforce any of its or Roche's licensed patent rights with the exclusive right and responsibility to resolve any claim of infringement brought by a third party, except that Pega-One must obtain Roche's prior written consent if any settlement would adversely affect Roche.

In exchange for the rights under the license agreement, Pega-One granted to Roche a number of ordinary shares of Pega-One and paid to Roche a nonrefundable upfront license fee in the low single-digits millions of dollars. Pega-One is also obligated to pay to Roche, for each Licensed Product, aggregate development milestone payments up to mid double-digit million dollars upon meeting certain regulatory, clinical, manufacturing, and commercial sale events. In addition, Pega-One is obligated to pay Roche sales milestone payments up to low single-digit hundred million dollars based on total worldwide aggregate annual net sales for each Licensed Product.

Upon commercialization of any Licensed Products, Pega-One is obligated to pay to Roche a tiered high-single digit royalty based on annual net sales on a Licensed Product-by-Licensed Product and country-by-country basis until the expiry of the royalty term. The royalty term will expire the later of (i) ten years after the date of first commercial sale of a Licensed Product, (ii) when there are no more valid claims under the licensed patents in the relevant country, or (iii) the date of expiration of the last to expire regulatory exclusivity for such Licensed Product in such country. The royalty payments are subject to certain reductions if there is a competing generic product, Pega-One considers it necessary to obtain a license to third party patents to avoid infringement, or if a court or governmental agency requires Pega-One to grant a compulsory license to a third party.

Unless terminated earlier, the license agreement expires on the date when no royalty or other payment obligations under this Agreement are or will become due. Pega-One may terminate the license agreement at any time in its entirety or on a product-by-product basis upon sufficient written notice. Either party may terminate the license agreement if the other party materially breaches the agreement without timely cure or becomes insolvent. Upon termination of the agreement, the rights granted by one party to the other will terminate in their entirety, or on a Licensed Product-by-Licensed Product basis. If Pega-One terminates without cause, breaches the agreement, or becomes insolvent, Roche may elect to continue development of the imgatuzumab product, and Pega-One must transfer to Roche (free of charge) all regulatory filings and approvals, clinical and non-clinical agreements, CMC agreements, and other related development contracts. Pega-One must also grant Roche a worldwide, exclusive, sublicensable, transferable license under its patent, know-how, and joint patent rights to research, develop, manufacture, have manufactured, use, offer to sell, sell, promote, export and import imgatuzumab and related products. If termination occurs after completion of a Phase 2 study of the first product, Roche will pay to Pega-One a royalty percentage rate in the low single digits based on net sales of the imgatuzumab product for ten years after the first commercial sale of the product on a country-by-country basis. If termination occurs after the first regulatory approval of the first product, Roche will pay to Pega-One a royalty percentage rate in the mid-single digits of net sales for ten years after the first commercial sale of the product on a country-by-country basis. Pega-One may not assign its rights or obligations under this Agreement without prior written consent from Roche, except to an affiliate or in the context of a merger, acquisition, sale or other transaction involving all or substantially all of the assets of Pega-One.

Z Factor

As of December 31, 2021, Z Factor, owned one pending U.S. patent application, 24 pending foreign applications and seven pending PCT applications. Z Factor's patent portfolio includes composition of matter claims directed to ZF874, polymorphs thereof and variants thereof, method of treatment claims with ZF874, and method of manufacturing claims related to ZF874. The pending patent applications, once nationalized and if issued, are expected to expire between 2039 and 2042, without taking into account any possible patent term adjustments or extensions and assuming payment of all appropriate maintenance, renewal, annuity, or other governmental fees. See "Management's Discussion and Analysis of Financial Condition and Results of Operations of The Centessa Predecessor Group and Certain Other Acquired Entities — Licensing Arrangements — Z Factor License Agreement" for more information.

Morphogen-IX

As of December 31, 2021, Morphogen-IX has a license to one issued U.S. patent, 81 issued foreign patents, e.g., France, Germany, UK, and China issued foreign patents, one U.S. pending patent application and six pending foreign patent applications. Morphogen-IX's licensed patent portfolio includes issued U.S. patents and issued foreign patents, which have composition of matter claims directed to MGX292 and BMP9 variants, and method of treatment claims with MGX292. The issued patents expire in 2035, and the pending patent applications, if issued, are expected to expire in 2035, without taking into account any possible patent term adjustments or extensions and assuming payment of all appropriate maintenance, renewal, annuity, or other governmental fees.

Morphogen-IX License Agreement

On October 30, 2015, our subsidiary, Morphogen-IX Limited, ("Morphogen-IX"), entered into a Patent and Know-How License Agreement ("License"), with Cambridge Enterprise Limited (a company wholly owned by the University of Cambridge) ("CE"), relating to BMP 9 and 10. Pursuant to the agreement, Morphogen-IX obtained from CE an exclusive, worldwide, royalty bearing, sublicensable (through multiple tiers) license, (the "Exclusive CE License"), under certain patent rights, ("BMP Patents"), and certain technical information and materials relating to BMP 9 and 10, ("BMP Know-How"), for the treatment of all diseases, including prophylaxis, for human and animal health or any related research or development, or the Field. Morphogen-IX also obtained a non-exclusive, worldwide, royalty-bearing, sublicensable (through multiple tiers) license, ("the CE Non-Exclusive License"), to under certain, data, technical information and other know-how that is not specific to BMP 9 and 10, (the "Non-Exclusive Know-How"). Under the CE Exclusive License and the CE Non-Exclusive License, Morphogen-IX has the right to develop and commercialize any product, process, service or use that uses or incorporates any BMP Patents, the BMP Know-How or the Non-Exclusive Know-How, or any materials that are sold in conjunction with any such products or services, in each such case, a Licensed Product. CE has reserved a customary limited right to use the BMP Patents, BMP Know-How and Non-Exclusive Know-How for academic publication, teaching, and academic research.

In addition to the rights described above, Morphogen-IX also obtained the right to exclusively license, upon request, any and all improvements, modifications, and other developments to the BMP Patents or the BMP Know-how arising during the term of the agreement, or BMP Improvements, provided that such BMP Improvements have been created by any or all of the inventors named in the BMP Patent and assigned to CE within 3 years from the effective date of the agreement.

Morphogen-IX must use commercially reasonable efforts to develop and commercialize the Licensed Products in accordance with the development plan, to introduce Licensed Products into the commercial market and to market Licensed Products after such introduction in the market, and to commit the necessary and available funding and personnel to maximize sales and corresponding return to CE under the License Agreement. Morphogen-IX, at its own cost, has the right to control the prosecution, maintenance and enforcement of the BMP Patents. CE has certain step-in rights if Morphogen-IX does not conduct certain BMP patent-related activities as set forth in the License Agreement.

In consideration for the rights granted by CE under the License Agreement, Morphogen- IX is obligated to reimburse CE for out-of-pocket expenses incurred by CE prior to the effective date of the License Agreement and pay an annual license fee of $14,000 (£10,000 at an exchange rate of 0.74).

Additionally, Morphogen-IX is obligated to pay CE certain milestone payments in the aggregate amount of up to $1.1 million (£0.8 million at an exchange rate of 0.74) upon the achievement of certain development and regulatory milestones. Upon commercialization of any Licensed Products, Morphogen-IX is obligated to pay CE a low single-digit royalty based on Morphogen-IX's or its sublicensee's annual net sales for each Licensed Product in the relevant country until the expiry of the royalty term, subject customary royalty deductions for necessary third party licenses. In countries where valid claims exist under the licensed patents, royalties are payable on a Licensed Product-by-Licensed Product and country-by-country basis until there are no more valid claims under the licensed patents in the relevant country.

Unless terminated earlier, the agreement will be in effect until the licensed patents have expired or been revoked without a right of further appeal; Morphogen-IX retains the right to use the licensed know-how in such circumstances. Morphogen-IX may terminate the License Agreement at any time for convenience with adequate written notice to CE. Either party may terminate the License Agreement based on customary termination rights. CE retains the right to terminate the agreement if Morphogen-IX challenges the validity or ownership of the BMP patents.

Capella Bioscience

As of December 31, 2021, Capella Bioscience, owned two pending U.S. patent applications, one issued foreign patent in the UK and five pending foreign patent applications, which include claims directed to compositions and methods of use of the lead anti-LIGHT antibody. The issued patent, which includes composition of matter claims and pharmaceutical composition claims to Capella's lead anti-LIGHT antibody and method of use claims with Capella's lead anti-LIGHT antibody, expires in 2038, and the pending patent applications, if issued, are expected to expire in 2038, without taking into account any possible patent term adjustments or extensions and assuming payment of all appropriate maintenance, renewal, annuity, or other governmental fees. Capella Bioscience also owns one pending PCT application with claims directed to compositions and methods of use of the lead anti-BDCA2 antibody. The pending patent application, once nationalized and if issued, is expected to expire in 2040, without taking into account any possible patent term adjustments or extensions and assuming payment of all appropriate maintenance, renewal, annuity, or other governmental fees. Capella Bioscience also owns one pending PCT application with claims directed to compositions and methods of use of anti-PD-L1 antibodies. The pending patent application, once nationalized and if issued, is expected to expire in 2040, without taking into account any possible patent term adjustments or extensions and assuming payment of all appropriate maintenance, renewal, annuity, or other governmental fees.

LockBody

As of December 31, 2021, LockBody owned two pending U.S. applications and 20 pending foreign patent applications. LockBody's patent portfolio includes composition of matter claims directed to LockBody's CD47 agents and method of treatment claims with LockBody's agents. The pending patent applications, once nationalized, where applicable, and if issued, are expected to expire between 2039 and 2040, without taking into account any possible patent term adjustments or extensions and assuming payment of all appropriate maintenance, renewal, annuity, or other governmental fees.

As of December 31, 2021, LockBody's subsidiary, Ultrahuman Two Limited, owned one pending U.S. application and eight pending foreign patent applications, includes composition of matter claims directed to anti-CD47 antibodies and method of treatment claims with anti-CD47 antibodies. The pending patent applications, if issued, are expected to expire in 2039, without taking into account any possible patent term adjustments or extensions and assuming payment of all appropriate maintenance, renewal, annuity, or other governmental fees.

As of December 31, 2021, LockBody's subsidiary, Ultrahuman Four Limited, owned one issued U.S. patent, one pending U.S. application and 13 pending foreign patent applications. The U.S. patent, which has composition of matter claims directed to anti-CD47 antibodies, expires in 2038, without taking into account any possible patent term extensions and assuming payment of all appropriate maintenance, renewal, annuity, or other governmental fees. The pending patent applications, if issued, are expected to expire in 2038, without taking into account any possible patent term adjustments or extensions and assuming payment of all appropriate maintenance, renewal, annuity, or other governmental fees.

LockBody IP Assignment

Our subsidiary, LockBody (formerly known as UltraHuman Six Limited ("UH6") has obtained from UltraHuman Limited ("UH"), an assignment of all intellectual property rights, title, and interest related to the LockBody platform. In September 2019, UH and UH6 entered into an Amended and Restated Intellectual Property Assignment Agreement ("IP Assignment"), expanding the prior April 2017 IP Assignment related to the UH6 antibodies, to further include intellectual property related to the LockBody platform technology which enables the activity of pharmaceutically-active molecules such as an antibody or receptor proteins to be locked inside a carrier molecule in an inactive prodrug state, until the prodrug so encapsulated is activated within a desired tissue, whereon the prodrug is released, including the use of platform technology with an antibody. LockBody also owns certain patent rights related to the LB101 conditional mAb targeting CD47 for the treatment of solid tumors.

Orexia Therapeutics

As of December 31, 2021, Orexia Therapeutics owned two pending U.S. provisional patent applications, two pending applications in Taiwan, and two pending PCT international applications. Orexia's patent portfolio includes claims directed to OX2R agonists and uses thereof. The pending patent applications, if issued, are expected to expire in 2041, without taking into account any possible patent term adjustments or extensions and assuming payment of all appropriate maintenance, renewal, annuity, or other governmental fees.

Orexia License Agreement

In January 2019, Heptares Therapeutics Limited entered into a license, assignment, and research services agreement with Orexia Limited, which was amended and restated in 2020 (together the "Agreement"), relating to certain specific molecules with, among other criteria, the primary mode of action of an orexin agonist or orexin positive modulator (Molecules). Under the agreement, Heptares assigned to Orexia all of Heptares' right, title, and interest in and to intellectual property that is already in existence and that is developed as a result of the agreement that relates solely to Molecules or products that contain Molecules (Products), including all rights to obtain patent or similar protection throughout the world for such intellectual property and to take any and all actions regarding past infringements of existing intellectual property. Additionally, Heptares granted to Orexia an exclusive, sublicensable (subject to certain terms) license to make, import, export, use, sell, or offer for sale, including to development, commercialization, registration, modification, enhancement, improvement, manufacturing, holding, keeping or disposing of Molecules and Products. Heptares must not by itself or through a third party (other than a single company) exploit, use or dispose of (*inter alia*) any product in the field of orexin agonism and orexin positive modulation for the duration of the agreement and for three years thereafter.

In consideration for the assignment and license, Orexia is to pay Heptares a royalty in the low single-digits on net sales of Products (subject to limitations in certain scenarios). Royalties are on a Product-by-Product and country-by country basis. Payments shall commence with the first commercial sale of such product in a country and shall continue until the later of: (a) the duration of regulatory exclusivity in the country; or (b) ten years after the first commercial sale. Further, Orexia is responsible for all development costs incurred by itself or Heptares in the performance of the research program (within the confines of the research budget). Additionally, Orexia must pay Heptares, on a Molecule-by-Molecule basis, development milestone payments in the aggregate of a low double-digit number in the millions of pounds sterling. Milestone payments are payable once per Molecule.

Orexia may terminate the agreement at any time following the expiration or termination of the research program. In addition, customary termination rights exist for both parties for breach and insolvency. In the event of termination, all licenses automatically terminate. The term of the agreement is until the later of: (i) the expiration of the last to expire patent within the licensed intellectual property; (ii) the expiration of the royalty term; and (iii) the fifteenth anniversary of the effective date. Upon expiration, with respect to any given Molecule, the license granted to Orexia shall become perpetual, irrevocable, and fully-paid up.

PearlRiver Bio

As of December 31, 2021, PearlRiver Bio, owned one pending foreign patent application and two PCT international applications with claims directed to EGFR inhibitors and methods of use. The pending applications, if issued, are expected to expire between 2041 and 2042, without taking into account any possible patent term adjustments or extensions and assuming payment of all appropriate maintenance, renewal, annuity, or other governmental fees. PearlRiver licenses 11 pending foreign applications and one pending U.S. application with claims directed to EGFR inhibitors and methods of use. The pending application, once nationalized and if issued, is expected to expire in 2039, without taking into account any possible patent term adjustments or extensions and assuming payment of all appropriate maintenance, renewal, annuity, or other governmental fees.

PearlRiver C797 License Agreement

In June 2020, PearlRiver Bio entered to an assignment agreement with Lead Discovery Center GmbH and TU Dortmund (together the "Assignors"), involving small molecule inhibitors of C797 mutated EGFR and related inventions (C797, or Product). Under the assignment agreement, the Assignors each and jointly sold, assigned and transferred to PearlRiver Bio their entire right, title and interest to certain know-how, patent application, invention disclosures, chemical and biological materials, and data analyses related to C797 ("Assigned Technology"). PearlRiver Bio has the sole right but not the obligation to control patent prosecution at its own cost. To the extent requested by PearlRiver Bio, and not included under the Assigned Technology, Assignors also agreed to grant a worldwide, non-exclusive, irrevocable, perpetual, transferable, right and license under C797 related intellectual property rights and/or know-how, for the purpose of developing, manufacturing, marketing, selling and/or otherwise commercializing any products or medical technology based on or comprising C797. PearlRiver Bio is obligated to use commercially reasonable efforts commercialize one or more Products at its own expense.

In consideration for the rights under the assignment agreement, PearlRiver Bio paid Assignors an upfront fee in the mid-to-high five-digit range in euros. In addition, PearlRiver Bio is obligated to pay Assignors up to a high single-digit millions in euros in total aggregate milestone payments upon meeting certain clinical and approval milestones and up to low double digit millions in euros in total aggregate sales milestone payments.

Upon commercialization of any Products, PearlRiver Bio is obligated to pay to Assignors a tiered low single-digit royalty based on annual net sales on a Product-by-Product and country-by-country basis until the expiry of the royalty term. The royalty term will expire upon the later of (i) the date on which the manufacture, distribution, use, marketing or sale of such Product in such country no longer infringes a valid claim of a patent in such country or (ii) ten years from the date of the first commercial sale of such Product in such country. The royalty payments are subject to certain reductions if for third party licenses.

If PearlRiver Bio materially breaches the assignment agreement (including a breach of payment obligations), the Assignors may withdraw from the agreement. In such event, PearlRiver Bio is obligated to retransfer its rights to the Assigned Technology to the Assignors. However, in case of withdrawal, PearlRiver Bio will automatically receive a non-exclusive, transferable license, which includes the right to sublicense in multiple tiers, to use the Assigned Technology for the development, manufacture, testing, authorization and/or commercialization of any technology and/or compounds, drug substance and/or drug products based on C797 and/or the Assigned Technology. PearlRiver Bio will still be responsible for any milestone and royalty payments described above.

PearlRiver Lead Discovery Center License Agreement

In March 2019, Lead Discovery Center GmbH (Lead Discovery) entered into a license agreement with PearlRiver Bio related to small molecule inhibitors of Her2 and EGFR carrying Exon 20 mutations. Under the license agreement, PearlRiver Bio obtained an exclusive, worldwide, transferable and sublicensable (subject to certain conditions) license, under certain patents, patent applications, technical information and licensed know-how, to research, develop, make, use, manufacture, have manufactured, offer, promote, sell, import or export products that use or incorporate the licensed know-how and technology. PearlRiver Bio also obtained a non-exclusive, worldwide, transferable and sublicensable (subject to certain conditions) license, under the Lead Discovery's background intellectual property, to research, develop, make, use, manufacture, have manufactured, offer, promote, sell, import or export products and/or otherwise exploit the licensed technology. Lead Discovery retains the non-exclusive, non-transferable, cost-free right to make, have made and use specific materials for internal non-commercial scientific research purposes, and to provide materials for non-commercial collaborations not interfering with the development of the products under the license agreement, and for other scientific purposes solely to non-profit research organisations.

In consideration for the rights under the license agreement, PearlRiver Bio is to pay Lead Discovery low single-digit royalties on the net sales of each licensed product that is sold or supplied by PearlRiver Bio or any of its sublicensees (subject to certain scenarios). Royalties are on a product-by-product and country-by country basis. Payments will commence with the first commercial sale of such product in a country and continue for the later of: (i) the date on which the manufacture, distribution, marketing or sale of a Product no longer infringes a valid claim (being a claim from an unexpired patent right or a patent application using the licensed technology) in such country; or (ii) ten years after the first commercial sale in such country. Additionally, PearlRiver Bio is required to pay certain one-time tiered milestone payments, on a molecule-by-molecule basis, in the low double digits million pounds sterling, and a one-time low double digits million pounds sterling sales milestone once cumulative net sales equal or exceed £0.5BN.

The license agreement lasts until terminated or until the last royalty term expires. PearlRiver Bio may terminate the agreement for convenience at its sole discretion with adequate written notice to Lead Discovery. Each party has customary termination rights in the event of breach. Lead Discovery is able to terminate in the event PearlRiver Bio notifies Lead Discovery of an intent to cease activities related to the licensed technology or the termination of the development of all Exon 20 development activities. In the event of termination, all licenses would cease and all research, development, manufacturing, marketing, sales and distribution of products that use or incorporate the licensed know-how and any other use of the patents would end. Additionally, if PearlRiver Bio terminates the license agreement for convenience, it must transfer certain inventions, intellectual property, records and title and interest in and to regulatory filings rights back to Lead Discovery. In the event PearlRiver Bio terminates the license agreement due to a breach by Lead Discovery, PearlRiver Bio would retain a non-exclusive, worldwide, perpetual, irrevocable, royalty-free, sublicensable license to licensed technology to the extent necessary to enable the use of research results for the purpose of researching, developing, making, using, selling and importing products in the field.

Janpix Limited

As of December 31, 2021, Janpix Limited owned four pending PCT international patent applications and one pending foreign patent application with claims directed to STAT degraders and methods of use. The pending applications, if issued, are expected to expire in 2041, without taking into account any possible patent term adjustments or extensions and assuming payment of all appropriate maintenance, renewal, annuity, or other governmental fees. Janpix also had rights

to three issued U.S. patents, seventeen granted foreign patents and six pending foreign applications with claims directed to STAT degraders and methods of use. The issued patents and pending applications, if issued, are expected to expire between 2033 and 2039, without taking into account any possible patent term adjustments or extensions and assuming payment of all appropriate maintenance, renewal, annuity, or other governmental fees.

Janpix Limited License Agreement

In July 2017, Janpix entered into a license agreement with the Governing Council of the University of Toronto ("UT") related to direct small molecule modulators of signal transducer and activator of transcription 3 ("STAT 3") and signal transducer and activator of transcription 5 ("STAT 5"). Under the license agreement, Janpix obtained an exclusive, worldwide, sublicensable (subject to certain conditions) license (the "UT License"), under certain patents and know-how ("Licensed Technology"), to research, develop, manufacture, market, sell, distribute and commercially exploit any licensed products for all uses in humans and animals (the "Field"). UT has retained for itself and certain other institutions, a customary right of use to the Licensed Technology for academic research and educational purposes. Additionally, Janpix has the right to exclusively license, with the right to sublicense, certain improvements to the Licensed Technology under the license agreement. Janpix also has an option right to negotiate a new license grant to any other intellectual property related to STAT 3 and/or STAT 5 inhibitors that is not considered an improvement under the license agreement.

Upon satisfaction of certain development and regulatory milestones, Janpix may be obligated to pay to UT total aggregate milestone payments of $15.0 million upon the achievement of certain development and regulatory milestones. Janpix is also obligated to pay to UT aggregate sales milestone payments up to $15.0 million based on total worldwide aggregate annual net sales for all licensed products containing a Licensed Compound. Each milestone payment is payable only once for a licensed product during term of the license agreement. Upon commercialization of any licensed products, Janpix is obligated to pay to UT a flat low to mid-single digit royalty based on Janpix's and its sublicensees' net sales, subject to certain royalty reductions when there are no more valid claims under the licensed patents in the relevant country or if Janpix deems it necessary to obtain a license to third party patents to avoid infringement.

Unless terminated earlier, the license agreement expires on the date that the underlying patents expire and there is no possibility of any applications in the patents proceeding to grant. Janpix may terminate the agreement upon reasonable grounds with adequate written notice. Either party may terminate the license agreement based on customary termination rights, or if UT challenges the validity of patents or the substantial or secret nature of the licensed know-how. In the event of termination, all licenses shall cease and revert to the relevant institution, and Janpix must cease all exploitation of the Licensed Technology.

Government Regulation

United States Food and Drug Administration Regulation

The FDA, and other regulatory authorities at federal, state and local levels, as well as in foreign countries, extensively regulate, among other things, the research, development, testing, manufacture, quality control, import, export, safety, effectiveness, labeling, packaging, storage, distribution, record keeping, approval, advertising, promotion, marketing, post-approval monitoring and post-approval reporting of drugs and biologics such as those we are developing. We, along with our vendors, collaboration partners, clinical research organizations ("CROs"), and CMOs, will be required to navigate the various preclinical, clinical, manufacturing and commercial approval requirements of the governing regulatory agencies of the countries in which we wish to conduct studies or seek approval of our product candidates. The process of obtaining regulatory approvals of drugs and ensuring subsequent compliance with appropriate United States federal, state, local and foreign statutes and regulations requires the expenditure of substantial time and financial resources. Failure to comply with the applicable regulatory requirements at any time during the product development process or post-approval may subject an applicant to delays in development or approval, as well as administrative and judicial sanctions.

In the United States, the FDA regulates drugs under the Federal Food, Drug, and Cosmetic Act ("FDCA"), and biologics under the FDCA and the Public Health Service Act ("PHSA"), and their implementing regulations. Both drugs and biologics are also subject to other federal, state and local statutes and regulations. Our product candidates are early-stage and have not been approved by the FDA for marketing in the United States.

Our product candidates must be approved for therapeutic indications by the FDA before they may be marketed in the United States. For our drug product candidates regulated under the FDCA, FDA must approve a New Drug Application ("NDA"). For our biologic product candidates regulated under the FDCA and PHSA, FDA must approve a Biologics License Application ("BLA"). The process is similar and generally involves the following:

- completion of extensive preclinical studies in accordance with applicable regulations, including studies conducted in accordance with GLP, requirements;
- submission to the FDA of an IND, application which must become effective before clinical trials may begin and must be updated annually and when certain changes are made;
- approval of the protocol and related documentation by an Institutional Review Board (IRB), or independent ethics committee at each clinical trial site before each trial may be initiated;
- performance of adequate and well-controlled clinical trials in accordance with the FDA's Good Clinical Practice (GCP), requirements and any additional requirements for the protection of human research subjects and their health information, to establish the safety and efficacy of the investigational product for each proposed indication;
- preparation and submission to the FDA of an NDA or BLA after completion of all pivotal trials;
- payment of user fees for FDA review of the NDA or BLA (unless a fee waiver applies);
- a determination by the FDA within 60 days of its receipt of an NDA or BLA to file the application for review;
- satisfactory completion of one or more FDA pre-approval inspections of the manufacturing facility or facilities where the product will be produced to assess compliance with current Good Manufacturing Practice requirements (cGMPs), to assure that the facilities, methods and controls are adequate to ensure and preserve the drug or biological product's identity, strength, quality and purity;
- satisfactory completion of any FDA audits of the clinical trial sites that generated the data in support of the NDA or BLA; and
- FDA review and approval of the NDA or BLA, including, where applicable, consideration of the views of any FDA advisory committee, prior to any commercial marketing or sale of the drug or biologic in the United States.

Preclinical Studies and Clinical Trials

Before testing any drug or biologic in humans, the product candidate must undergo rigorous preclinical testing. Preclinical studies include laboratory evaluations of chemistry, formulation and stability, as well as *in vitro* and animal studies to assess safety and in some cases to establish the rationale for therapeutic use. The conduct of preclinical studies is subject to federal and state regulations and requirements, including GLP requirements for safety and toxicology studies. In the United States, the results of the preclinical studies, together with manufacturing information and analytical data must be submitted to the FDA as part of an IND.

An IND is a request for authorization from the FDA to administer an investigational product to humans, and must become effective before clinical trials may begin. The central focus of an IND submission is on the general investigational plan and the protocol(s) for clinical studies. The IND also includes results of animal and *in vitro* studies assessing the toxicology, pharmacokinetics, pharmacology, and pharmacodynamic characteristics of the product; chemistry, manufacturing, and controls information; and any available human data or literature to support the use of the investigational product. In the United States, the IND automatically becomes effective 30 days after receipt by the FDA, unless the FDA, within the 30-day time period, raises concerns or questions about the conduct of the clinical trial, including concerns that human research subjects will be exposed to unreasonable health risks, and imposes a clinical hold. In such a case, the IND sponsor and the FDA must resolve any outstanding concerns before the clinical trial can begin. Some long-term preclinical testing may continue after the IND is submitted. Accordingly, submission of an IND may or may not result in FDA authorization to begin a trial.

The clinical stage of development involves the administration of the product candidate to healthy volunteers or patients under the supervision of qualified investigators, generally physicians not employed by or under the trial sponsor's

control, in accordance with GCP requirements, which include the requirements that all research subjects provide their informed consent for their participation in any clinical trial. Clinical trials are conducted under protocols detailing, among other things, the objectives of the clinical trial, dosing procedures, subject selection and exclusion criteria and the parameters and criteria to be used in monitoring safety and evaluating effectiveness. Each protocol, and any subsequent amendments to the protocol, must be submitted to the FDA as part of the IND. Furthermore, each clinical trial must be reviewed and approved by an IRB for each institution at which the clinical trial will be conducted to ensure that the risks to individuals participating in the clinical trials are minimized and are reasonable related to the anticipated benefits. The IRB also approves the informed consent form that must be provided to each clinical trial subject or his or her legal representative, and must monitor the clinical trial until completed.

The FDA may, at any time during the initial 30-day IND review period or while clinical trials are ongoing under the IND, impose a partial or complete clinical hold based on concerns for patient safety and/or noncompliance with regulatory requirements. This order issued by the FDA would delay a proposed clinical study or cause suspension of an ongoing study until all outstanding concerns have been adequately addressed, and the FDA has notified the company that investigations may proceed. Imposition of a clinical hold could cause significant delays or difficulties in completing planned clinical studies in a timely manner. In addition, the IRB, or the sponsor may suspend or discontinue a clinical trial at any time on various grounds, including a finding that the subjects are being exposed to an unacceptable health risk. Some studies also include oversight by an independent group of qualified experts organized by the clinical study sponsor, known as a data safety monitoring board, which provides authorization for whether or not a study may move forward at designated check points based on access to certain data from the study and may recommend that the clinical trial be stopped if it determines that there is an unacceptable safety risk for subjects or other grounds, such as no demonstration of efficacy. There also are requirements governing the reporting of ongoing clinical trials and completed clinical trials to public registries. In the United States, information about applicable clinical trials, including clinical trial results, must be submitted within specific timeframes for publication on the www.clinicaltrials.gov website.

A sponsor who wishes to conduct a clinical trial outside of the United States may, but need not, obtain FDA authorization to conduct the clinical trial under an IND. The FDA will accept a well-designed and well-conducted foreign clinical study not conducted under an IND if the study was conducted in accordance with GCP requirements, and the FDA is able to validate the data through an onsite inspection if deemed necessary. Clinical trials to evaluate therapeutic indications to support NDAs and BLAs for marketing approval are typically conducted in three sequential phases, which may overlap.

- Phase 1—Phase 1 clinical trials involve initial introduction of the investigational product in a limited population of healthy human volunteers or patients with the target disease or condition. These studies are typically designed to test the safety, dosage tolerance, absorption, metabolism and distribution of the investigational product in humans, evaluate the side effects associated with increasing doses, and, if possible, to gain early evidence of effectiveness.

- Phase 2—Phase 2 clinical trials typically involve administration of the investigational product to a limited patient population with a specified disease or condition to evaluate the preliminary efficacy, optimal dosages and dosing schedule and to identify possible adverse side effects and safety risks. Multiple Phase 2 clinical trials may be conducted to obtain information prior to beginning larger and more expensive Phase 3 clinical trials.

- Phase 3—Phase 3 clinical trials typically involve administration of the investigational product to an expanded patient population to further evaluate dosage, to provide substantial evidence of clinical efficacy and to further test for safety, generally at multiple geographically dispersed clinical trial sites. These clinical trials are intended to establish the overall risk/benefit ratio of the investigational product and to provide an adequate basis for physician labeling. Generally, two adequate and well-controlled Phase 3 clinical trials are required by the FDA for approval of an NDA or BLA.

Post-approval trials, sometimes referred to as Phase 4 clinical trials, may be conducted after initial marketing approval. These trials are used to gain additional experience from the treatment of patients in the intended therapeutic indication and are commonly intended to generate additional safety data regarding use of the product in a clinical setting. In certain instances, the FDA may mandate the performance of Phase 4 clinical trials as a condition of approval of an NDA or BLA. Failure to exhibit due diligence with regard to conducting required Phase 4 clinical trials could result in withdrawal of approval for products.

Progress reports detailing the results of the clinical trials, among other information, must be submitted at least annually to the FDA and written IND safety reports must be submitted to the FDA and the investigators fifteen days after the trial sponsor determines the information qualifies for reporting for serious and unexpected suspected adverse events, findings from other studies or animal or *in vitro* testing that suggest a significant risk for human participants exposed to the drug or biologic and any clinically important increase in the rate of a serious suspected adverse reaction over that listed in the protocol or investigator brochure. The sponsor must also notify the FDA of any unexpected fatal or life-threatening suspected adverse reaction as soon as possible but in no case later than seven calendar days after the sponsor's initial receipt of the information.

Concurrent with clinical trials, companies usually complete additional animal studies and must also develop additional information about the drug or biological characteristics of the product candidate and finalize a process for manufacturing the drug product in commercial quantities in accordance with cGMP requirements. The manufacturing process must be capable of consistently producing quality batches of the product candidate and manufacturers must develop, among other things, methods for testing the identity, strength, quality and purity of the final drug product. Additionally, appropriate packaging must be selected and tested, and stability studies must be conducted to demonstrate that the product candidate does not undergo unacceptable deterioration over its shelf life and to identify appropriate storage conditions for the product candidate.

FDA Marketing Application Review Process

Assuming successful completion of the required clinical testing, the results of the preclinical studies and clinical trials, together with detailed information relating to the product's chemistry, manufacture, controls and proposed labeling, among other things, are submitted to the FDA as part of an NDA (for a drug) or BLA (for a biologic) requesting approval to market the product for one or more indications. The NDA or BLA must include all relevant data available from pertinent preclinical studies and clinical trials, including negative or ambiguous results as well as positive findings. Data may come from company-sponsored clinical trials intended to test the safety and efficacy of a product's use or from a number of alternative sources, including studies initiated by investigators. To support marketing approval, the data submitted must be sufficient in quality and quantity to establish the safety and efficacy of the investigational drug, or the safety, purity and potency of the investigational biologic, to the satisfaction of the FDA. FDA approval of an NDA or BLA must be obtained before a drug or biologic may be marketed in the United States.

In addition, under the Pediatric Research Equity Act ("PREA"), certain NDAs and BLAs and certain supplements to an NDA or BLA must contain data to assess the safety and effectiveness of the drug or biological product candidate for the claimed indications in all relevant pediatric subpopulations and to support dosing and administration for each pediatric subpopulation for which the product is safe and effective. The FDCA requires that a sponsor who is planning to submit a marketing application for a drug or biological product that includes a new active ingredient or clinically active component, new indication, new dosage form, new dosing regimen or new route of administration submit an initial Pediatric Study Plan within 60 days after an end-of-Phase 2 meeting or as may be agreed between the sponsor and FDA. Unless otherwise required by regulation, PREA generally does not apply to a drug or biological product for an indication for which orphan designation has been granted.

In the United States, the FDA reviews all submitted NDAs and BLAs to ensure they are sufficiently complete to permit substantive review before it accepts them for filing, and may request additional information rather than accepting the NDA or BLA for filing. The FDA makes a decision on accepting an NDA or BLA for filing within 60 days of receipt, and such decision could include a refusal to file by the FDA. Once the submission is accepted for filing, the FDA begins an in-depth substantive review of the application. The FDA reviews an NDA or BLA to determine, among other things, whether the product is safe and effective and whether the facility in which it is manufactured, processed, packaged or held meets standards, including cGMP requirements, designed to assure and preserve the product's identity, strength, quality and purity. Under the goals and polices agreed to by the FDA under the Prescription Drug User Fee Act ("PDUFA"), the FDA targets ten months, from the filing date, in which to complete its initial review of an original NDA for a new molecular entity or BLA and respond to the applicant, and six months from the filing date of an original NDA for a new molecular entity or BLA filed for priority review. The FDA does not always meet its PDUFA goal dates for standard or priority NDAs or BLAs, and the review process is often extended by FDA requests for additional information or clarification.

Further, under PDUFA, as amended, each NDA or BLA must be accompanied by a user fee, and the sponsor of an approved NDA or BLA is also subject to an annual program fee. FDA adjusts the PDUFA user fees on an annual basis. Fee waivers or reductions may be available in certain circumstances, including a waiver of the application fee for the first

application filed by a small business. Additionally, no user fees are assessed on NDAs or BLAs for products designated as orphan drugs, unless the product also includes a non-orphan indication.

The FDA may refer an application for a drug or biologic to an advisory committee. An advisory committee is a panel of independent experts, including clinicians and other scientific experts, which reviews, evaluates and provides a recommendation as to whether the application should be approved and under what conditions. The FDA is not bound by the recommendations of an advisory committee, but it considers such recommendations carefully when making decisions.

Before approving an NDA or BLA, the FDA typically will inspect the facility or facilities where the product is manufactured. The FDA will not approve an application unless it determines that the manufacturing processes and facilities are in compliance with cGMP requirements and adequate to assure consistent production of the product within required specifications. Additionally, before approving an NDA or BLA, the FDA may inspect one or more clinical trial sites to assure compliance with GCP and other requirements and the integrity of the clinical data submitted to the FDA.

After evaluating the application and all related information, including the advisory committee recommendation, if any, and inspection reports regarding the manufacturing facilities and clinical trial sites, the FDA may issue an approval letter, or, in some cases, a Complete Response Letter. A Complete Response Letter indicates that the review cycle of the application is complete and the application is not ready for approval. A Complete Response Letter will usually describe all of the deficiencies that the FDA has identified in the NDA or BLA, except that where the FDA determines that the data supporting the application are inadequate to support approval, the FDA may issue the Complete Response Letter without first conducting required inspections, testing submitted product lots, and/or reviewing proposed labeling. In issuing the Complete Response Letter, the FDA may recommend actions that the applicant might take to place the NDA or BLA in condition for approval, including requests for additional information or clarification. Even with submission of this additional information, the FDA ultimately may decide that the application does not satisfy the regulatory criteria for approval. If and when those conditions have been met to the FDA's satisfaction, the FDA will typically issue an approval letter. An approval letter authorizes commercial marketing of the product with specific prescribing information for specific indications.

Even if the FDA approves a product, depending on the specific risk(s) to be addressed, the FDA may limit the approved indications for use of the product, require that contraindications, warnings or precautions be included in the product labeling, require that post-approval studies, including Phase 4 clinical trials, be conducted to further assess a product's safety or efficacy after approval, require testing and surveillance programs to monitor the product after commercialization, or impose other conditions, including distribution and use restrictions or other risk management mechanisms under REMS, which can materially affect the potential market and profitability of the product. REMS can include medication guides, communication plans for healthcare professionals, and elements to assure safe use ("ETASU"). ETASU can include, but are not limited to, special training or certification for prescribing or dispensing, dispensing only under certain circumstances, special monitoring, and the use of patent registries. If the FDA concludes a REMS is needed, the sponsor of the NDA or BLA must submit a proposed REMS; the FDA will not approve the NDA or BLA without a REMS, if required. The FDA may prevent or limit further marketing of a product based on the results of post-marketing studies or surveillance programs. After approval, some types of changes to the approved product, such as adding new indications, manufacturing changes, and additional labeling claims, are subject to further testing requirements and FDA review and approval.

Orphan Drug Designation and Exclusivity

Under the Orphan Drug Act, the FDA may grant orphan drug designation ("ODD"), to a drug or biologic intended to treat a rare disease or condition, defined as a disease or condition with either a patient population of fewer than 200,000 individuals in the United States, or a patient population greater of than 200,000 individuals in the United States when there is no reasonable expectation that the cost of developing and making available the drug or biologic in the United States will be recovered from sales in the United States of that drug or biologic. ODD must be requested before submitting an NDA or BLA. After the FDA grants ODD, the generic identity of the therapeutic agent and its potential orphan use are disclosed publicly by the FDA.

If a product that has received ODD and subsequently receives the first FDA approval for that drug or biologic for the disease for which it has such designation, the product is entitled to orphan product exclusivity, which means that the FDA may not approve any other applications, including a full NDA or BLA, to market the same drug or biologic for the same indication for seven years from the approval of the NDA or BLA, except in limited circumstances, such as a showing of clinical superiority to the product with orphan drug exclusivity or if the FDA finds that the holder of the orphan drug

exclusivity has not shown that it can assure the availability of sufficient quantities of the orphan drug to meet the needs of patients with the disease or condition for which the drug was designated. Orphan drug exclusivity does not prevent the FDA from approving a different drug or biologic for the same disease or condition, or the same drug or biologic for a different disease or condition. Among the other benefits of ODD are tax credits for certain research and a waiver of the NDA or BLA application user fee.

A designated orphan drug may not receive orphan drug exclusivity if it is approved for a use that is broader than the indication for which it received ODD. In addition, orphan drug exclusive marketing rights in the United States may be lost if the FDA later determines that the request for designation was materially defective or if the manufacturer is unable to assure sufficient quantities of the product to meet the needs of patients with the rare disease or condition.

Expedited Development and Review Programs

The FDA maintains several programs intended to facilitate and expedite development and review of new drugs and biologics to address unmet medical needs in the treatment of serious or life-threatening diseases or conditions. These programs include Fast Track designation, Breakthrough Therapy designation, priority review and accelerated approval.

A new drug or biologic is eligible for Fast Track designation if it is intended to treat a serious or life-threatening disease or condition and demonstrates the potential to address unmet medical needs for such disease or condition. Fast Track designation applies to the combination of the product and the specific indication for which it is being studied. Fast Track designation provides increased opportunities for sponsor interactions with the FDA during preclinical and clinical development, in addition to the potential for rolling review once a marketing application is filed, meaning that the FDA may initiate review of sections of a Fast Track product's application before the application is complete upon satisfaction of certain conditions.

In addition, a new drug or biological product may be eligible for Breakthrough Therapy designation if it is intended to treat a serious or life-threatening disease or condition and preliminary clinical evidence indicates that the drug or biologic, alone or in combination with or more other drugs or biologics, may demonstrate substantial improvement over existing therapies on one or more clinically significant endpoints, such as substantial treatment effects observed early in clinical development. Breakthrough Therapy designation provides all the features of Fast Track designation in addition to intensive guidance on an efficient development program beginning as early as Phase 1, and FDA organizational commitment to expedited development, including involvement of senior managers and experienced review staff in a cross-disciplinary review, where appropriate.

Any product submitted to the FDA for approval, including a product with Fast Track, or Breakthrough Therapy designation, may also be eligible for priority review. A product is eligible for priority review if it is intended to treat a serious or life-threatening disease or condition, and if approved, would provide a significant improvement in safety or effectiveness. For an original NDA for a new molecular entity and a BLA, priority review designation means the FDA's goal is to take action on the marketing application within six months of the 60-day filing date (compared with ten months under standard review).

The FDA may grant accelerated approval to a product intended to treat a serious or life-threatening disease or condition that generally provides a meaningful therapeutic advantage to patients over available treatments, and demonstrates an effect on a surrogate endpoint that is reasonably likely to predict clinical benefit or on a clinical endpoint that can be measured earlier than irreversible morbidity or mortality (IMM), that is reasonably likely to predict an effect on IMM or other clinical benefit, taking into account the severity, rarity, or prevalence of the condition and the availability or lack of alternative treatments.

For drugs and biologics granted accelerated approval, the FDA generally requires sponsors to conduct, in a diligent manner, adequate and well-controlled post-approval confirmatory studies to verify and describe the product's clinical benefit. Failure to conduct required post-approval studies with due diligence, failure to confirm a clinical benefit during the post-approval studies, or dissemination of false or misleading promotional materials would allow the FDA to withdraw the product approval on an expedited basis. All promotional materials for product candidates approved under accelerated approval are subject to prior review by the FDA unless the FDA informs the applicant otherwise.

Fast Track designation, Breakthrough Therapy designation, and priority review do not change the scientific or medical standards for approval or the quality of evidence necessary to support approval but may expedite the development or review process.

Post-Approval Requirements for Drugs and Biologics in the United States

In the United States, drugs and biologics manufactured or distributed pursuant to FDA approvals are subject to pervasive and continuing regulation by the FDA, including, among other things, requirements relating to recordkeeping, periodic reporting, product sampling and distribution, reporting of adverse experiences with the product, complying with promotion and advertising requirements, which include restrictions on promoting products for unapproved uses or patient populations (known as "off-label use") and limitations on industry-sponsored scientific and educational activities. Although physicians may prescribe approved products for off-label uses, manufacturers may not market or promote such uses. The FDA and other agencies actively enforce the laws and regulations prohibiting the promotion of off-label uses, including not only by Company employees but also by agents of the Company or those speaking on the Company's behalf, and a company that is found to have improperly promoted off-label uses may be subject to significant liability. Failure to comply with these requirements can result in, among other things, adverse publicity, warning letters, corrective advertising and potential civil and criminal penalties, including liabilities under the False Claims Act where products carry reimbursement under federal health care programs. Promotional materials for approved drugs and biologics must be submitted to the FDA in conjunction with their first use or first publication. Further, if there are any modifications to the product, including changes in indications, labeling or manufacturing processes or facilities, the applicant may be required to submit and obtain FDA approval of a new NDA or BLA or NDA or BLA supplement, which may require the development of additional data or preclinical studies and clinical trials.

The FDA may impose a number of post-approval requirements as a condition of approval of an NDA or BLA. For example, the FDA may require post-market testing, including Phase 4 clinical trials, and surveillance to further assess and monitor the product's safety and effectiveness after commercialization.

In addition, drug and biologics manufacturers and their subcontractors involved in the manufacture and distribution of approved products are required to register their establishments with the FDA and certain state agencies and are subject to periodic unannounced inspections by the FDA and certain state agencies for compliance with ongoing regulatory requirements, including cGMP, which impose certain procedural and documentation requirements upon us and our CMOs. Changes to the manufacturing process are strictly regulated, and, depending on the significance of the change, may require prior FDA approval before being implemented. FDA regulations also require investigation and correction of any deviations from cGMP and impose reporting requirements upon us and any third-party manufacturers that we may decide to use. Manufacturers and other parties involved in the drug supply chain for prescription drug and biological products must also comply with product tracking and tracing requirements and for notifying the FDA of counterfeit, diverted, stolen and intentionally adulterated products or products that are otherwise unfit for distribution in the United States. Accordingly, manufacturers must continue to expend time, money and effort in the area of production and quality control to maintain compliance with cGMP and other aspects of regulatory compliance. Failure to comply with statutory and regulatory requirements can subject a manufacturer to possible legal or regulatory action, such as warning letters, suspension of manufacturing, product seizures, injunctions, civil penalties or criminal prosecution.

The FDA may withdraw approval if compliance with regulatory requirements and standards is not maintained or if problems occur after the product reaches the market. Later discovery of previously unknown problems with a product, including adverse events of unanticipated severity or frequency, or with manufacturing processes, or failure to comply with regulatory requirements, may result in revisions to the approved labeling to add new safety information, requirements for post-market studies or clinical trials to assess new safety risks, or imposition of distribution or other restrictions under a REMS. Other potential consequences include, among other things:

- restrictions on the marketing or manufacturing of the product, complete withdrawal of the product from the market or product recalls;
- safety alerts, Dear Healthcare Provider letters, press releases or other communications containing warnings or other safety information about the product;
- mandated modification of promotional materials and labeling and issuance of corrective information;
- fines, warning letters, or untitled letters;
- holds on clinical trials;
- refusal of the FDA to approve applications or supplements to approved applications, or suspension or revocation of product approvals;

- product seizure or detention, or refusal to permit the import or export of products;
- injunctions or the imposition of civil or criminal penalties; and
- consent decrees, corporate integrity agreements, debarment or exclusion from federal healthcare programs.

Regulation of Combination Products in the United States

Certain products may be comprised of components that are regulated under separate regulatory authorities and by different centers at the FDA. These products are known as combination products. A combination product is comprised of a combination of a drug and a device; a biological product and a device; a drug and a biological product; or a drug, a device, and a biological product. Under regulations issued by the FDA, a combination product includes:

- a product comprised of two or more regulated components that are physically, chemically, or otherwise combined or mixed and produced as a single entity;
- two or more separate products packaged together in a single package or as a unit and comprised of drug and device products, device and biological products, or biological and drug products;
- a drug, device, or biological product packaged separately that according to its investigational plan or proposed labeling is intended for use only with an approved individually specified drug, device or biological product where both are required to achieve the intended use, indication, or effect and where upon approval of the proposed product the labeling of the approved product would need to be changed, *e.g.*, to reflect a change in intended use, dosage form, strength, route of administration, or significant change in dose; or
- any investigational drug, device, or biological product packaged separately that according to its proposed labeling is for use only with another individually specified investigational drug, device, or biological product where both are required to achieve the intended use, indication, or effect.

Under the FDCA, the FDA is charged with assigning a center with primary jurisdiction, or a lead center, for review of a combination product. That determination is based on the "primary mode of action" of the combination product, which means the single mode of action that provides the most important therapeutic action of the combination product, i.e., the mode of action expected to make the greatest contribution to the overall intended therapeutic effects of the combination product.

United States Patent Term Restoration and Marketing Exclusivity

Depending upon the timing, duration and specifics of FDA approval of our future product candidates, some of our United States patents may be eligible for limited patent term extension under the Drug Price Competition and Patent Term Restoration Act of 1984, commonly referred to as the Hatch-Waxman Amendments. The Hatch-Waxman Amendments permit restoration of the patent term of up to five years as compensation for patent term lost during the FDA regulatory review process. Patent-term restoration, however, cannot extend the remaining term of a patent beyond a total of 14 years from the product's approval date and only those claims covering such approved drug product, a method for using it or a method for manufacturing it may be extended. The patent-term restoration period is generally one-half the time between the effective date of an IND and the submission date of an NDA or BLA plus the time between the submission date of an NDA or BLA and the approval of that application, except that the review period is reduced by any time during which the applicant failed to exercise due diligence. Only one patent applicable to an approved drug is eligible for the extension and the application for the extension must be submitted prior to the expiration of the patent. The U.S. Patent and Trademark Office, in consultation with the FDA, reviews and approves the application for any patent term extension or restoration. In the future, we may apply for restoration of patent term for our currently owned or licensed patents to add patent life beyond its current expiration date, depending on the expected length of the clinical trials and other factors involved in the filing of the relevant NDA or BLA.

Regulatory exclusivity provisions under the FDCA also can delay the submission or the approval of certain applications. The FDCA provides a five-year period of non-patent marketing exclusivity within the United States to the first applicant to gain approval of an NDA for a new chemical entity. A drug is a new chemical entity if the FDA has not

previously approved any other new drug containing the same active moiety, which is the molecule or ion responsible for the action of the drug substance. During the exclusivity period, the FDA may not accept for review an ANDA, or a 505(b)(2) NDA submitted by another company for another version of such drug where the applicant does not own or have a legal right of reference to all the data required for approval. However, an application may be submitted after four years if it contains a certification of patent invalidity or non-infringement.

The FDCA also provides three years of exclusivity for an NDA, 505(b)(2) NDA or supplement to an existing NDA if new clinical investigations, other than bioavailability studies, that were conducted or sponsored by the applicant are deemed by the FDA to be essential to the approval of the application, for example, new indications, dosages or strengths of an existing drug. This three-year exclusivity covers only the conditions of use associated with the new clinical investigations and does not prohibit the FDA from approving ANDAs for drugs containing the original active agent for other conditions of use. Five-year and three-year exclusivity will not delay the submission or approval of a full NDA. However, an applicant submitting a full NDA would be required to conduct or obtain a right of reference to all of the preclinical studies and adequate and well-controlled clinical trials necessary to demonstrate safety and effectiveness.

In addition, both drugs and biologics can also obtain pediatric exclusivity in the United States. Pediatric exclusivity, if granted, adds six months to existing exclusivity periods and patent terms. This six-month exclusivity, which runs from the end of other exclusivity protection or patent term, may be granted based on the voluntary completion of a pediatric study in accordance with an FDA-issued "Written Request" for such a study.

United States Biosimilars and Exclusivity

The Patient Protection and Affordable Care Act, as amended by the Health Care and Education Reconciliation Act of 2010, or collectively ("ACA"), signed into law in 2010, includes a subtitle called the Biologics Price Competition and Innovation Act ("BPCIA"), which created an abbreviated approval pathway for biological products that are biosimilar to or interchangeable with an FDA-licensed reference biological product. The FDA has issued several guidance documents outlining an approach to review and approval of biosimilars in the United States. Biosimilarity, which requires that there be no clinically meaningful differences between the biological product and the reference product in terms of safety, purity, and potency, can be shown through analytical studies, animal studies, and a clinical study or studies. Interchangeability requires that a product is biosimilar to the reference product and the product must demonstrate that it can be expected to produce the same clinical results as the reference product in any given patient and, for products that are administered multiple times to an individual, the biologic and the reference biologic may be alternated or switched after one has been previously administered without increasing safety risks or risks of diminished efficacy relative to exclusive use of the reference biologic.

Under the BPCIA, a reference biological product is granted 12 years of data exclusivity from the time of first licensure of the product, and an application for a biosimilar product may not be submitted to the FDA until four years following the date that the reference product was first licensed by the FDA. In addition, the approval of a biosimilar product may not be made effective by the FDA until 12 years from the date on which the reference product was first licensed. During this 12-year period of exclusivity, another company may still market a competing version of the reference product if the FDA approves a full BLA for the competing product containing that applicant's own preclinical data and data from adequate and well-controlled clinical trials to demonstrate the safety, purity and potency of its product. The BPCIA also created certain exclusivity periods for biosimilars approved as interchangeable products. At this juncture, it is unclear whether products deemed "interchangeable" by the FDA will, in fact, be readily substituted by pharmacies, which are governed by state pharmacy law.

Other United States Regulatory Matters

Manufacturing, sales, promotion and other activities of product candidates following product approval, where applicable, or commercialization are also subject to regulation by numerous regulatory authorities in the United States in addition to the FDA, which may include the Centers for Medicare & Medicaid Services ("CMS"), other divisions of the Department of Health and Human Services ("HHS"), the Department of Justice, the Drug Enforcement Administration, the Consumer Product Safety Commission, the Federal Trade Commission, the Occupational Safety & Health Administration, the Environmental Protection Agency and state and local governments and governmental agencies.

Other United States Healthcare Laws

Healthcare providers and third-party payors in the United States and elsewhere play a primary role in the recommendation and prescription of pharmaceutical products. Arrangements with third-party payors and customers can expose pharmaceutical manufactures to broadly applicable fraud and abuse and other healthcare laws and regulations, including, without limitation, the federal Anti-Kickback Statute and the federal False Claims Act ("FCA"), which may constrain the business or financial arrangements and relationships through which companies research, sell, market and distribute pharmaceutical products. In addition, transparency laws and patient privacy laws can apply to the activities of pharmaceutical manufactures. The applicable federal, state and foreign healthcare laws and regulations that can affect a pharmaceutical company's operations include without limitation:

- The federal Anti-Kickback Statute, which prohibits, among other things, knowingly and willfully soliciting, receiving, offering or paying any remuneration (including any kickback, bribe, or rebate), directly or indirectly, overtly or covertly, in cash or in kind, to induce, or in return for, either the referral of an individual, or the purchase, lease, order or recommendation of any good, facility, item or service for which payment may be made, in whole or in part, under the Medicare and Medicaid programs, or other federal healthcare programs. A person or entity can be found guilty of violating the statute without actual knowledge of the statute or specific intent to violate it. In addition, the government may assert that a claim including items or services resulting from a violation of the federal Anti-Kickback Statute constitutes a false or fraudulent claim for purposes of the FCA. The Anti-Kickback Statute has been interpreted to apply to arrangements between pharmaceutical manufacturers on the one hand and prescribers, purchasers, and formulary managers on the other. There are a number of statutory exceptions and regulatory safe harbors protecting some common activities from prosecution, but such exceptions and safe harbors are drawn narrowly and require strict compliance in order to offer protection;

- The federal civil and criminal false claims laws, including the FCA, and civil monetary penalty laws, which prohibit any person or entity from, among other things, knowingly presenting, or causing to be presented, a false, fictitious or fraudulent claim for payment to, or approval by, the federal government or knowingly making, using or causing to be made or used a false record or statement, including providing inaccurate billing or coding information to customers or promoting a product off-label, material to a false or fraudulent claim to the federal government. As a result of a modification made by the Fraud Enforcement and Recovery Act of 2009, a claim includes "any request or demand" for money or property presented to the federal government. In addition, manufacturers can be held liable under the FCA even when they do not submit claims directly to government payors if they are deemed to "cause" the submission of false or fraudulent claims. The FCA also permits a private individual acting as a "whistleblower" to bring actions on behalf of the federal government alleging violations of the FCA and to share in any monetary recovery;

- The federal Health Insurance Portability and Accountability Act of 1996 ("HIPAA"), which created federal criminal statutes that prohibit, among other things, knowingly and willfully executing, or attempting to execute, a scheme to defraud any healthcare benefit program or obtain, by means of false or fraudulent pretenses, representations, or promises, any of the money or property owned by, or under the custody or control of, any healthcare benefit program, regardless of the payor (e.g., public or private) and knowingly and willfully falsifying, concealing or covering up by any trick or device a material fact or making any materially false statements in connection with the delivery of, or payment for, healthcare benefits, items or services relating to healthcare matters. Similar to the federal Anti-Kickback Statute, a person or entity can be found guilty of violating HIPAA without actual knowledge of the statute or specific intent to violate it;

- HIPAA, as amended by the Health Information Technology for Economic and Clinical Health Act of 2009 ("HITECH"), and their respective implementing regulations, which impose, among other things, specified requirements relating to the privacy, security and transmission of individually identifiable health information held by covered entities and their business associates as well as their covered subcontractors. HITECH also created new tiers of civil monetary penalties, amended HIPAA to make civil and criminal penalties directly applicable to business associates, and gave state attorneys general new authority to file civil actions for damages or injunctions in federal courts to enforce the federal HIPAA laws and seek attorneys' fees and costs associated with pursuing federal civil actions;

- The federal legislation commonly referred to as the Physician Payments Sunshine Act, created under the ACA, and its implementing regulations, which requires certain manufacturers of drugs, devices, biologics and medical supplies for which payment is available under Medicare, Medicaid or the Children's Health Insurance Program (with certain exceptions) to report annually to CMS, information related to payments or other transfers of value made to physicians (defined to include doctors, dentists, optometrists, podiatrists and chiropractors) and teaching hospitals, as well as ownership and investment interests held by physicians and their immediate family members. Effective January 1, 2022, covered manufacturers also are required to report information regarding their payments and other transfers of value to physician assistants, and nurse practitioners, clinical nurse specialists, anesthesiologist assistants, certified registered nurse anesthetists and certified nurse midwives during the previous year;

- Federal government price reporting laws, which require us to calculate and report complex pricing metrics in an accurate and timely manner to government programs;

- Federal consumer protection and unfair competition laws, which broadly regulate marketplace activities and activities that potentially harm consumers; and

- Analogous state laws and regulations, including: state anti-kickback and false claims laws, which may apply to our business practices, including, but not limited to, research, distribution, sales and marketing arrangements and claims involving healthcare items or services reimbursed by any third-party payor, including private insurers; state laws that require pharmaceutical companies to comply with the pharmaceutical industry's voluntary compliance guidelines and the relevant compliance guidance promulgated by the U.S. federal government, or otherwise restrict payments that may be made to healthcare providers and other potential referral sources; state and local laws that require drug manufacturers to report information related to payments and other transfers of value to physicians and other healthcare providers or marketing expenditures; state laws that require the reporting of information related to drug pricing; state and local laws requiring the registration of pharmaceutical sales representatives; and state laws governing the privacy and security of health information in some circumstances, many of which differ from each other in significant ways and often are not preempted by HIPAA, thus complicating compliance efforts.

Pricing and rebate programs must comply with the Medicaid rebate requirements of the U.S. Omnibus Budget Reconciliation Act of 1990 and more recent requirements in the ACA. If products are made available to authorized users of the Federal Supply Schedule of the General Services Administration, additional laws and requirements apply. Products must meet applicable child-resistant packaging requirements under the U.S. Poison Prevention Packaging Act. Manufacturing, sales, promotion and other activities also are potentially subject to federal and state consumer protection and unfair competition laws.

The distribution of pharmaceutical products is subject to additional requirements and regulations, including extensive record-keeping, licensing, storage and security requirements intended to prevent the unauthorized sale of pharmaceutical products.

The scope and enforcement of each of these laws is uncertain and subject to rapid change in the current environment of healthcare reform, especially in light of the lack of applicable precedent and regulations with respect to certain laws. Federal and state enforcement bodies have recently increased their scrutiny of interactions between healthcare

companies and healthcare providers, which has led to a number of investigations, prosecutions, convictions and settlements in the healthcare industry. Prohibitions or restrictions on sales or withdrawal of future marketed products could materially affect our business in an adverse way. Changes in regulations, statutes or the interpretation of existing regulations could impact our business in the future by requiring, for example: (i) changes to our manufacturing arrangements; (ii) additions or modifications to product labeling; (iii) the recall or discontinuation of our products; or (iv) additional record-keeping requirements. If any such changes were to be imposed, they could adversely affect the operation of our business. Ensuring our business arrangements comply with applicable healthcare laws, as well as responding to possible investigations by government authorities, can be time- and resource-consuming and can divert a company's attention from the business.

The failure to comply with any of these laws or regulatory requirements subjects companies to possible legal or regulatory action. Depending on the circumstances, failure to meet applicable regulatory requirements can result in significant penalties, including civil, criminal and administrative penalties, damages, fines, disgorgement, imprisonment, possible exclusion from participation in federal and state funded healthcare programs, contractual damages and the curtailment or restricting of our operations, as well as additional reporting obligations and oversight if we become subject to a corporate integrity agreement or other agreement to resolve allegations of non-compliance with these laws. Any action for violation of these laws, even if successfully defended, could cause a pharmaceutical company to incur significant legal expenses and divert management's attention from the operation of the business.

Health Reform

In the United States, there have been and continue to be a number of legislative initiatives to contain healthcare costs. For example, in March 2010, the ACA was passed, which substantially changed the way healthcare is financed by both governmental and private insurers, and continues to significantly impact the U.S. pharmaceutical industry. The ACA, among other things, subjects biological products to potential competition by lower-cost biosimilars, addresses a new methodology by which rebates owed by manufacturers under the Medicaid Drug Rebate Program are calculated for drugs that are inhaled, infused, instilled, implanted or injected, increases the minimum Medicaid rebates owed by manufacturers under the Medicaid Drug Rebate Program extends the rebate program to individuals enrolled in Medicaid managed care organizations, establishes annual fees and taxes on manufacturers of certain branded prescription drugs, and creates a new Medicare Part D coverage gap discount program, in which manufacturers must agree to offer 70% point-of-sale discounts off negotiated prices of applicable brand drugs to eligible beneficiaries during their coverage gap period, as a condition to coverage under Medicare Part D for the manufacturer's outpatient drugs.

Since its enactment, there have been judicial, Congressional and executive challenges to certain aspects of the ACA. On June 17, 2021, the U.S. Supreme Court dismissed the most recent judicial challenge to the ACA brought by several states without specifically ruling on the constitutionality of the ACA. Prior to the Supreme Court's decision, President Biden issued an executive order to initiate a special enrollment period from February 15, 2021 through August 15, 2021 for purposes of obtaining health insurance coverage through the ACA marketplace. The executive order also instructed certain governmental agencies to review and reconsider their existing policies and rules that limit access to healthcare, including among others, reexamining Medicaid demonstration projects and waiver programs that include work requirements, and policies that create unnecessary barriers to obtaining access to health insurance coverage through Medicaid or the ACA. It is unclear how other healthcare reform measures of the Biden administration or other efforts, if any, to challenge, repeal or replace the ACA will impact our business.

Other legislative changes have been proposed and adopted in the United States since the ACA was enacted:

- On August 2, 2011, the Budget Control Act of 2011, among other things, created measures for spending reductions by Congress. A Joint Select Committee on Deficit Reduction, tasked with recommending a targeted deficit reduction of at least $1.2 trillion for the years 2013 through 2021, was unable to reach required goals, thereby triggering the legislation's automatic reduction to several government programs. This includes aggregate reductions of Medicare payments to providers of 2% per fiscal year. These reductions went into effect in April 2013 and, due to subsequent legislative amendments to the statute, will remain in effect through 2030 unless additional action is taken by Congress. Pursuant to the Coronavirus Aid, Relief, and Economic Security Act, also known as the CARES Act, as well as subsequent legislation, these reductions have been suspended from May 1, 2020 through March 31, 2021 due to the COVID-19 pandemic. Then, a 1% payment reduction will occur beginning April 1, 2022 through June 30, 2022, and the 2% payment reduction will resume on July 1, 2022.
- On January 2, 2013, the American Taxpayer Relief Act of 2012 was signed into law, which, among other things, further reduced Medicare payments to several types of providers.

- On April 13, 2017, CMS published a final rule that gives states greater flexibility in setting benchmarks for insurers in the individual and small group marketplaces, which may have the effect of relaxing the essential health benefits required under the ACA for plans sold through such marketplaces.
- On May 30, 2018, the Right to Try Act, was signed into law. The law, among other things, provides a federal framework for certain patients to access certain investigational new drug products that have completed a Phase 1 clinical trial and that are undergoing investigation for FDA approval. Under certain circumstances, eligible patients can seek treatment without enrolling in clinical trials and without obtaining FDA permission under the FDA expanded access program. There is no obligation for a pharmaceutical manufacturer to make its drug products available to eligible patients as a result of the Right to Try Act.
- On May 23, 2019, CMS published a final rule to allow Medicare Advantage Plans the option of using step therapy for Part B drugs beginning January 1, 2020.
- On December 20, 2019, former President Trump signed into law the Further Consolidated Appropriations Act (H.R. 1865), which repealed the Cadillac tax, the health insurance provider tax, and the medical device excise tax. It is impossible to determine whether similar taxes could be instated in the future.

Moreover, payment methodologies may be subject to changes in healthcare legislation and regulatory initiatives which could limit the amounts that federal and state governments will pay for healthcare products and services and result in reduced demand for certain pharmaceutical products or additional pricing pressures.

Additionally, there has been increasing legislative and enforcement interest in the United States with respect to specialty drug pricing practices. Specifically, there have been several recent U.S. presidential executive orders, congressional inquiries and proposed and enacted federal and state legislation designed to, among other things, bring more transparency to drug pricing, reduce the cost of prescription drugs under Medicare, review the relationship between pricing and manufacturer patient programs, and reform government program reimbursement methodologies for drugs.

At the federal level, President Biden signed an Executive Order on July 9, 2021 affirming the administration's policy to (i) support legislative reforms that would lower the prices of prescription drug and biologics, including by allowing Medicare to negotiate drug prices, by imposing inflation caps, and, by supporting the development and market entry of lower-cost generic drugs and biosimilars; and (ii) support the enactment of a public health insurance option. Among other things, the Executive Order also directs HHS to provide a report on actions to combat excessive pricing of prescription drugs, enhance the domestic drug supply chain, reduce the price that the Federal government pays for drugs, and address price gouging in the industry; and directs the FDA to work with states and Indian Tribes that propose to develop section 804 Importation Programs in accordance with the Medicare Prescription Drug, Improvement, and Modernization Act of 2003, and the FDA's implementing regulations. FDA released such implementing regulations on September 24, 2020, which went into effect on November 30, 2020, providing guidance for states to build and submit importation plans for drugs from Canada. On September 25, 2020, CMS stated drugs imported by states under this rule will not be eligible for federal rebates under Section 1927 of the Social Security Act and manufacturers would not report these drugs for "best price" or Average Manufacturer Price purposes. Since these drugs are not considered covered outpatient drugs, CMS further stated it will not publish a National Average Drug Acquisition Cost for these drugs. If implemented, importation of drugs from Canada may materially and adversely affect the price we receive for any of our product candidates. Further, on November 20, 2020 CMS issued an Interim Final Rule implementing the Most Favored Nation, or MFN, Model under which Medicare Part B reimbursement rates would have been calculated for certain drugs and biologicals based on the lowest price drug manufacturers receive in Organization for Economic Cooperation and Development countries with a similar gross domestic product per capita. However, on December 29, 2021 CMS rescinded the Most Favored Nations rule. Additionally, on November 30, 2020, HHS published a regulation removing safe harbor protection for price reductions from pharmaceutical manufacturers to plan sponsors under Part D, either directly or through pharmacy benefit managers, unless the price reduction is required by law. The rule also creates a new safe harbor for price reductions reflected at the point-of-sale, as well as a safe harbor for certain fixed fee arrangements between pharmacy benefit managers and manufacturers. Pursuant to court order, the removal and addition of the aforementioned safe harbors were delayed and recent legislation imposed a moratorium on implementation of the rule until January 1, 2026. Although a number of these and other proposed measures may require authorization through additional legislation to become effective, and the Biden administration may reverse or otherwise change these measures, both the Biden administration and Congress have indicated that they will continue to seek new legislative measures to control drug costs.

At the state level, legislatures have increasingly passed legislation and implemented regulations designed to control pharmaceutical product pricing, including price or patient reimbursement constraints, discounts, restrictions on certain product access and marketing cost disclosure and transparency measures, and, in some cases, designed to encourage importation from other countries and bulk purchasing. In addition, regional healthcare authorities and individual hospitals are increasingly using bidding procedures to determine what pharmaceutical products and which suppliers will be included in their prescription drug and other healthcare programs. This could reduce the ultimate demand for our drugs or put pressure on our drug pricing, which could negatively affect our business, financial condition, results of operations and prospects.

Legally mandated price controls on payment amounts by third-party payors or other restrictions could harm our business, financial condition, results of operations and prospects. In addition, regional healthcare authorities and individual hospitals are increasingly using bidding procedures to determine what pharmaceutical products and which suppliers will be included in their prescription drug and other healthcare programs. This could reduce the ultimate demand for our drugs or put pressure on our drug pricing, which could negatively affect our business, financial condition, results of operations and prospects. Further, it is possible that additional governmental action is taken in response to the COVID-19 pandemic.

Reimbursement

Sales of our products, when and if approved, will depend, in part, on the extent to which our products will be covered by third-party payors, such as government health programs, commercial insurance and managed healthcare organizations. In the United States, no uniform policy of coverage and reimbursement for drug or biological products exists. Accordingly, decisions regarding the extent of coverage and amount of reimbursement to be provided for any of our products will be made on a payor-by-payor basis. Factors payors consider in determining reimbursement are based on whether the product is:

- a covered benefit under its health plan;
- safe, effective and medically necessary;
- appropriate for the specific patient;
- cost-effective; and
- neither experimental nor investigational.

In the United States, for example, principal decisions about reimbursement for new products are typically made by CMS, which decides whether and to what extent a new product will be covered and reimbursed under Medicare. Private third-party payors often follow CMS's decisions regarding coverage and reimbursement to a substantial degree. However, one third-party payor's determination to provide coverage for a product candidate does not assure that other payors will also provide coverage for the product candidate. Further, no uniform policy for coverage and reimbursement exists in the United States, and coverage and reimbursement can differ significantly from payor to payor. As a result, coverage determination is often a time-consuming and costly process that will require us to provide scientific and clinical support for the use of our products to each payor separately, with no assurance that coverage and adequate reimbursement will be obtained. Further, coverage policies and third-party payor reimbursement rates may change at any time. Even if favorable coverage and reimbursement status is attained, less favorable coverage policies and reimbursement rates may be implemented in the future.

The U.S. government, state legislatures and foreign governments have shown significant interest in implementing cost containment programs to limit the growth of government-paid health care costs, including price-controls, restrictions on reimbursement and requirements for substitution of biosimilars for branded prescription drugs. For example, the ACA contains provisions that may reduce the profitability of drug products through increased rebates for drugs reimbursed by Medicaid programs, extension of Medicaid rebates to Medicaid managed care plans, mandatory discounts for certain Medicare Part D beneficiaries and annual fees based on pharmaceutical companies' share of sales to federal healthcare programs. Adoption of general controls and measures, coupled with the tightening of restrictive policies in jurisdictions with existing controls and measures, could limit payments for pharmaceutical drugs.

The Medicaid Drug Rebate Program requires pharmaceutical manufacturers to enter into and have in effect a national rebate agreement with the Secretary of the Department of Health and Human Services as a condition for states to receive federal matching funds for the manufacturer's outpatient drugs furnished to Medicaid patients. The ACA made

several changes to the Medicaid Drug Rebate Program, including increasing pharmaceutical manufacturers' rebate liability by raising the minimum basic Medicaid rebate on most branded prescription drugs from 15.1% of average manufacturer price (AMP), to 23.1% of AMP and adding a new rebate calculation for "line extensions" (i.e., new formulations, such as extended release formulations) of solid oral dosage forms of branded products, as well as potentially impacting their rebate liability by modifying the statutory definition of AMP. The ACA also expanded the universe of Medicaid utilization subject to drug rebates by requiring pharmaceutical manufacturers to pay rebates on Medicaid managed care utilization and by enlarging the population potentially eligible for Medicaid drug benefits.

The Medicare Prescription Drug, Improvement, and Modernization Act of 2003 (MMA), established the Medicare Part D program to provide a voluntary prescription drug benefit to Medicare beneficiaries. Under Part D, Medicare beneficiaries may enroll in prescription drug plans offered by private entities that provide coverage of outpatient prescription drugs. Unlike Medicare Part A and B, Part D coverage is not standardized. While all Medicare drug plans must give at least a standard level of coverage set by Medicare, Part D prescription drug plan sponsors are not required to pay for all covered Part D drugs, and each drug plan can develop its own drug formulary that identifies which drugs it will cover and at what tier or level. However, Part D prescription drug formularies must include drugs within each therapeutic category and class of covered Part D drugs, though not necessarily all the drugs in each category or class. Any formulary used by a Part D prescription drug plan must be developed and reviewed by a pharmacy and therapeutic committee. Government payment for some of the costs of prescription drugs may increase demand for products for which we receive marketing approval. However, any negotiated prices for our products covered by a Part D prescription drug plan likely will be lower than the prices we might otherwise obtain. Moreover, while the MMA applies only to drug benefits for Medicare beneficiaries, private payors often follow Medicare coverage policy and payment limitations in setting their own payment rates. Any reduction in payment that results from the MMA may result in a similar reduction in payments from non-governmental payors.

For a drug product to receive federal reimbursement under the Medicaid or Medicare Part B programs or to be sold directly to U.S. government agencies, the manufacturer must extend discounts to entities eligible to participate in the 340B drug pricing program. The required 340B discount on a given product is calculated based on the AMP and Medicaid rebate amounts reported by the manufacturer. As of 2010, the ACA expanded the types of entities eligible to receive discounted 340B pricing, although, under the current state of the law, with the exception of children's hospitals, these newly eligible entities will not be eligible to receive discounted 340B pricing on orphan drugs. In addition, as 340B drug pricing is determined based on AMP and Medicaid rebate data, the revisions to the Medicaid rebate formula and AMP definition described above could cause the required 340B discount to increase.

As noted above, the marketability of any products for which we receive regulatory approval for commercial sale may suffer if the government and third-party payors fail to provide coverage and reimbursement. Obtaining coverage and reimbursement for newly approved drugs and biologics is a time-consuming and costly process, and coverage may be more limited than the purposes for which a drug is approved by the FDA or comparable foreign regulatory authorities. Assuming coverage is obtained for a given product by a third-party payor, the resulting reimbursement payment rates may not be adequate or may require co-payments that patients find unacceptably high. Additionally, coverage policies and third-party reimbursement rates may change at any time. Patients who are prescribed medications for the treatment of their conditions, and their prescribing physicians, generally rely on third-party payors to reimburse all or part of the costs associated with their prescription drugs. Patients are unlikely to use products unless coverage is provided and reimbursement is adequate to cover all or a significant portion of the cost of prescribed products.

In addition, in most foreign countries, the proposed pricing for a drug must be approved before it may be lawfully marketed. The requirements governing drug pricing and reimbursement vary widely from country to country. For example, the EU provides options for its member states to restrict the range of medicinal products for which their national health insurance systems provide reimbursement and to control the prices of medicinal products for human use. A Member State may approve a specific price for the medicinal product or it may instead adopt a system of direct or indirect controls on the profitability of the company placing the medicinal product on the market. There can be no assurance that any country that has price controls or reimbursement limitations for pharmaceutical products will allow favorable reimbursement and pricing arrangements for any of our products. Historically, products launched in the EU do not follow price structures of the United States and generally prices tend to be significantly lower.

European Drug Development

In the EU, our future products also may be subject to extensive regulatory requirements. As in the United States, medicinal products can be marketed only if a marketing authorization from the competent regulatory agencies has been obtained.

Similar to the United States, the various phases of preclinical and clinical research in the EU are subject to significant regulatory controls. In April 2014, the EU adopted the new Clinical Trials Regulation (EU) No 536/2014, which replaced the Clinical Trials Directive 2001/20/EC on January 31, 2022. The transitory provisions of the new Regulation offer sponsors the possibility to choose between the requirements of the previous Directive and the new Regulation if the request for authorization of a clinical trial is submitted in the year after the new Regulation became applicable. If the sponsor chooses to submit under the previous Directive, the clinical trial continues to be governed by the Directive until three years after the new Regulation became applicable. If a clinical trial continues for more than three years after the Regulation became applicable, the new Regulation will at that time begin to apply to the clinical trial. The new Regulation will be directly applicable in all Member States (and so does not require national implementing legislation in each Member State), and aims at simplifying and streamlining the approval of clinical studies in the EU. The main characteristics of the new Regulation include: a streamlined application procedure via a single-entry point through the Clinical Trials Information System, or CTIS; a single set of documents to be prepared and submitted for the application as well as simplified reporting procedures for clinical trial sponsors; and a harmonized procedure for the assessment of applications for clinical trials, which is divided in two parts (Part I contains scientific and medicinal product documentation and Part II contains the national and patient-level documentation). Part I is assessed by a coordinated review by the competent authorities of all EU Member States in which an application for authorization of a clinical trial has been submitted (Concerned Member States) of a draft report prepared by a Reference Member State. Part II is assessed separately by each Concerned Member State. Strict deadlines have also been established for the assessment of clinical trial applications.

We are in the process of applying to renew our status with EMA as a small and medium-sized enterprise ("SME"). If we obtain SME status with the EMA, it will provide access to administrative, regulatory and financial support, including fee reductions for scientific advice and regulatory procedures.

European Drug Review and Approval

In the EU, medicinal products can only be commercialized after obtaining a marketing authorization (MA). There are two main types of MAs:

- The centralized MA is issued by the European Commission through the centralized procedure, based on the opinion of the Committee for Medicinal Products for Human Use (CHMP), of the EMA, and is valid throughout the entire territory of EU and the additional Member States of the European Economic Area (Iceland, Liechtenstein and Norway) (EMA). The centralized procedure is mandatory for certain types of products, such as products produced by biotechnological processes, orphan medicinal products, advanced-therapy medicinal products (gene-therapy, somatic cell-therapy or tissue-engineered medicines) and medicinal products containing a new active substance indicated for the treatment of HIV, AIDS, cancer, neurodegenerative disorders, diabetes, auto-immune and other immune dysfunctions and viral diseases. The centralized procedure is optional for products containing a new active substance not yet authorized in the EEA, or for products that constitute a significant therapeutic, scientific or technical innovation or which are in the interest of public health in the EU. Under the centralized procedure the maximum timeframe for the evaluation of a MA application by the EMA is 210 days, excluding clock stops, when additional written or oral information is to be provided by the applicant in response to questions asked by the CHMP. Clock stops may extend the timeframe of evaluation of a MA application considerably beyond 210 days. Where the CHMP gives a positive opinion, the EMA provides the opinion together with supporting documentation to the European Commission, who make the final decision to grant a MA, which is issued within 67 days of receipt of the EMA's recommendation. Accelerated assessment might be granted by the CHMP in exceptional cases, when a medicinal product is expected to be of a major public health interest, particularly from the point of view of therapeutic innovation. The timeframe for the evaluation of a MA application under the accelerated assessment procedure is of 150 days, excluding stop-clocks, but it is possible that the CHMP may revert to the standard time limit for the centralized procedure if it determines that the application is no longer appropriate to conduct an accelerated assessment.

- National MAs, which are issued by the competent authorities of the Member States of the EU and only cover their respective territory, are available for products not falling within the mandatory scope of the centralized procedure. Where a product has already been authorized for marketing in a Member State of the EU, this national MA can be recognized in other Member States through the mutual recognition procedure. If the product has not received a national MA in any Member State at the time of application, it can be approved simultaneously in various Member States through the decentralized procedure. Under the decentralized procedure an identical dossier is submitted to the competent authorities of each of the Member States in which the MA is sought, one of which is selected by the applicant as the Reference Member State (RMS). The competent authority of the RMS prepares a draft assessment report, a draft summary of the product characteristics, or SmPC, and a draft of the labeling and package leaflet, which are sent to the other Member States (referred to as the Concerned Member States) for their approval. If the Concerned Member States raise no objections, based on a potential serious risk to public health, to the assessment, SmPC, labeling, or packaging proposed by the RMS, the product is subsequently granted a national MA in all the Member States (i.e., in the RMS and the Concerned Member States).

Under the above described procedures, before granting the MA, the EMA or the competent authorities of the Member States of the EU make an assessment of the risk-benefit balance of the product on the basis of scientific criteria concerning its quality, safety and efficacy.

European Data and Market Exclusivity

In the EU, innovative medicinal products (including both small molecules and biological medicinal products), sometimes referred to as new active substances, approved on the basis of a complete independent data package, generally qualify for eight years of data exclusivity upon a MA and an additional two years of market exclusivity. The data exclusivity, if granted, prevents generic or biosimilar applicants from referencing the innovator's pre-clinical and clinical trial data contained in the dossier of the reference product when applying for a generic or biosimilar MA in the EU, for a period of eight years from the date on which the reference product was first authorized in the EU. During the additional two-year period of market exclusivity, a generic or biosimilar MA can be submitted, and the innovator's data may be referenced, but no generic or biosimilar product can be marketed in the EU until the expiration of the market exclusivity period. The overall ten-year period will be extended to a maximum of eleven years if, during the first eight years of those ten years, the MA holder obtains an MA for one or more new therapeutic indications which, during the scientific evaluation prior to their authorization, are determined to bring a significant clinical benefit in comparison with currently approved therapies. Even if an innovative medicinal product gains the prescribed period of data exclusivity, another company could nevertheless also market another version of the product if such company obtained an MA based on an application with a complete and independent data package of pharmaceutical tests, preclinical tests and clinical trials.

European orphan designation and exclusivity

In the EU, the EMA's Committee for Orphan Medicinal Products grants orphan drug designation to promote the development of products that are: (1) intended for the diagnosis, prevention or treatment of a life-threatening or chronically debilitating condition which; (2) either (a) affects no more than 5 in 10,000 persons in the European Union, when the application is made or where it is unlikely that the marketing of the medicine would generate sufficient return in the EU to justify the necessary investment in its development; and (3) there exists no satisfactory method of diagnosis, prevention or treatment of such condition, or, if such a method exists, the product in question would be of significant benefit to those affected by the condition.

In the EU, orphan designation entitles a party to financial incentives such as reduction of fees or fee waivers, and ten years of market exclusivity is granted following marketing approval for the orphan medicinal product. This period may be reduced to six years if, at the end of the fifth year, it is established that the orphan designation criteria are no longer met, including where it is shown that the product is sufficiently profitable not to justify maintenance of market exclusivity. During the period of market exclusivity, an MA may only be granted to a "similar medicinal product" for the same therapeutic indication if: (i) a second applicant can establish that its product, although similar to the authorized product, is safer, more effective or otherwise clinically superior; (ii) the MA holder for the authorized product consents to a second orphan medicinal product application; or (iii) the MA holder for the authorized product cannot supply enough orphan medicinal product. A "similar medicinal product" is defined as a medicinal product containing a similar active substance or

substances as contained in an authorized orphan medicinal product, and which is intended for the same therapeutic indication. Orphan designation must be requested before submitting an application for marketing approval. Orphan designation does not convey any advantage in, or shorten the duration of, the regulatory review and approval process.

European pediatric investigation plan

In the EU, companies developing a new medicinal product must agree upon a pediatric investigation plan (PIP), with the EMA's Pediatric Committee (PDCO), and must conduct pediatric clinical trials in accordance with that PIP, unless a waiver applies (e.g., because the relevant disease or condition occurs only in adults). The PIP sets out the timing and measures proposed to generate data to support a pediatric indication of the product for which MA is being sought. The PDCO can grant a deferral of the obligation to implement some or all of the measures of the PIP until there are sufficient data to demonstrate the efficacy and safety of the product in adults, in which case the pediatric clinical trials must be completed at a later date. Further, the obligation to provide pediatric clinical trial data can be waived by the PDCO when this data is not needed or appropriate because the product is likely to be ineffective or unsafe in children, the disease or condition for which the product is intended occurs only in adult populations, or when the product does not represent a significant therapeutic benefit over existing treatments for pediatric patients. Products that are granted an MA with the results of pediatric clinical trials conducted in accordance with the PIP (even where such results are negative) are eligible for six months' supplementary protection certificate extension (if any is in effect at the time of approval). In the case of orphan medicinal products, a two year extension of the orphan market exclusivity may be available. This pediatric reward is subject to specific conditions and is not automatically available when data in compliance with the PIP are developed and submitted.

PRIME Designation

In March 2016, the EMA launched an initiative to facilitate development of product candidates in indications, often rare, for which few or no therapies currently exist. The PRIority Medicines (PRIME), scheme is intended to encourage product development in areas of unmet medical need and provides accelerated assessment of products representing substantial innovation, where the MA application will be made through the centralized procedure. Eligible products must target conditions for which where is an unmet medical need (there is no satisfactory method of diagnosis, prevention or treatment in the EU or, if there is, the new medicine will bring a major therapeutic advantage) and they must demonstrate the potential to address the unmet medical need by introducing new methods of therapy or improving existing ones. Applicants will typically be at the exploratory clinical trial phase of development, and will have preliminary clinical evidence in patients to demonstrate the promising activity of the medicine and its potential to address to a significant extent an unmet medical need. In exceptional circumstances, products from small- and medium-sized enterprises may qualify for earlier entry into the PRIME scheme than larger companies, if compelling non-clinical data in a relevant model provide early evidence of promising activity, and first in man trials indicate adequate exposure for the desired pharmacotherapeutic effects and tolerability. Many benefits accrue to sponsors of product candidates with PRIME designation, including but not limited to, early and proactive regulatory dialogue with the EMA, frequent discussions on clinical trial designs and other development program elements, and accelerated MA application assessment once a dossier has been submitted. Importantly, a dedicated EMA contact and rapporteur from the EMA's CHMP or Committee for Advanced Therapies are appointed early in the PRIME scheme facilitating increased understanding of the product at EMA's Committee level. A kick-off meeting initiates these relationships and includes a team of multidisciplinary experts at the EMA to provide guidance on the overall development and regulatory strategies. Where, during the course of development, a medicine no longer meets the eligibility criteria, support under the PRIME scheme may be withdrawn.

Regulatory Requirements After a Marketing Authorization has been Obtained

In case an MA for a medicinal product in the EU is obtained, the holder of the MA is required to comply with a range of requirements applicable to the manufacturing, marketing, promotion and sale of medicinal products. These include:

- Compliance with the EU's stringent pharmacovigilance or safety reporting rules must be ensured. These rules can impose post-authorization studies and additional monitoring obligations.

- The manufacturing of authorized medicinal products, for which a separate manufacturer's license is mandatory, must also be conducted in strict compliance with the applicable EU laws, regulations and guidance, including Directive 2001/83/EC, Directive 2003/94/EC, Regulation (EC) No 726/2004 and the European Commission Guidelines for Good Manufacturing Practice. These requirements include compliance with EU cGMP standards

when manufacturing medicinal products and active pharmaceutical ingredients, including the manufacture of active pharmaceutical ingredients outside of the European Union with the intention to import the active pharmaceutical ingredients into the European Union.

- The marketing and promotion of authorized products, including industry-sponsored continuing medical education and advertising directed toward the prescribers of products and/or the general public, are strictly regulated in the European Union. Direct-to-consumer advertising of prescription medicines is prohibited across the EU.

Much like the Anti-Kickback Statue prohibition in the United States, the provision of benefits or advantages to physicians or other health care professionals to induce or encourage the prescription, recommendation, endorsement, purchase, supply, order or use of medicinal products is also prohibited in the European Union. The provision of benefits or advantages to induce or reward improper performance generally is usually governed by the national anti-bribery laws of European Union Member States, and the Bribery Act 2010 in the UK. Infringement of these laws could result in substantial fines and imprisonment. EU Directive 2001/83/EC, which is the EU Directive governing medicinal products for human use, further provides that, where medicinal products are being promoted to persons qualified to prescribe or supply them, no gifts, pecuniary advantages or benefits in kind may be supplied, offered or promised to such persons unless they are inexpensive and relevant to the practice of medicine or pharmacy. This provision has been transposed into the Human Medicines Regulations 2012 and so remains applicable in the UK despite its departure from the EU.

Payments made to physicians or other healthcare professionals in certain European Union Member States must be publicly disclosed. Moreover, agreements with physicians often must be the subject of prior notification and approval by the physician's employer, his or her competent professional organization and/or the regulatory authorities of the individual EU Member States. These requirements are provided in the national laws, industry codes or professional codes of conduct, applicable in the EU Member States. Failure to comply with these requirements could result in reputational risk, public reprimands, administrative penalties, fines or imprisonment.

The aforementioned EU rules are generally applicable in the EEA.

Brexit and the Regulatory Framework in the United Kingdom

On June 23, 2016, the electorate in the UK voted in favor of leaving the EU, commonly referred to as Brexit, and the UK officially withdrew from the EU on January 31, 2020. Pursuant to the formal withdrawal arrangements agreed between the UK and the EU, the UK was subject to a transition period until December 31, 2020 (Transition Period), during which EU rules continued to apply. However, the EU and the UK have concluded a trade and cooperation agreement, or TCA, which was provisionally applicable since January 1, 2021 and has been formally applicable since May 1, 2021. The TCA includes specific provisions concerning pharmaceuticals, which include the mutual recognition of GMP, inspections of manufacturing facilities for medicinal products and GMP documents issued, but does not foresee wholesale mutual recognition of UK and EU pharmaceutical regulations. At present, Great Britain has implemented EU legislation on the marketing, promotion and sale of medicinal products through the Human Medicines Regulations 2012 (as amended) (under the Northern Ireland Protocol, the EU regulatory framework will continue to apply in Northern Ireland). The regulatory regime in Great Britain therefore largely aligns with current European Union regulations, however it is possible that these regimes will diverge in future now that Great Britain's regulatory system is independent from the EU and the TCA does not provide for mutual recognition of UK and EU pharmaceutical legislation. For example, the UK has implemented the now repealed Clinical Trials Directive 2001/20/EC into national law through the Medicines for Human Use (Clinical Trials) Regulations 2004 (as amended). The extent to which the regulation of clinical trials in the UK will mirror the new Clinical Trials Regulation now that has come into effect is not yet known, however the MHRA has conducted a consultation on a set of proposals designed to improve and strengthen the United Kingdom clinical trials legislation.

Great Britain is no longer covered by the EU's procedures for the grant of MAs (Northern Ireland will be covered by the centralized authorization procedure and can be covered as a CMS under the decentralized or mutual recognition procedures). A separate MA will be required to market drugs in Great Britain. All medicinal products with a valid centralized MA on January 1, 2021 were automatically converted into Great Britain MAs (unless the MA holder opted out of such a conversion). For two years from 1 January 2021, the UK's regulator, the MHRA, may adopt decisions taken by the European Commission on the approval of new MAs through the centralized procedure, and the MHRA will have regard to MAs approved in a country in the European Economic Area (although in both cases an MA will only be granted if any Great Britain-specific requirements are met). This is known as the EC Decision Reliance Procedure. Various national procedures are now available to place a drug on the market in the UK, Great Britain, or Northern Ireland, with the main

national procedure having a maximum timeframe of 150 days (excluding time taken to provide any further information or data required). The MHRA also offers a 150-day assessment timeline for all high quality applications for a UK, Great Britain or Northern Ireland MA. The 150 day timeline does not, however, include a "clock-off" period which may occur if issues arise or points require clarification following an initial assessment of the application. Such issues should be addressed within a 60-day period, although extensions may be granted in exceptional cases.

Since January 1, 2021, a separate process for orphan designation has applied in Great Britain. There is now no pre-MA orphan designation (as there is in the EU) in Great Britain and the application for orphan designation will be reviewed by the MHRA at the time of an MA application for a UK or Great Britain MA. The criteria for orphan designation are the same as in the European Union, save that they apply to Great Britain only (e.g., there must be no satisfactory method of diagnosis, prevention or treatment of the condition concerned in Great Britain, as opposed to the EU, and the prevalence of the condition must be no more than 5 in 10,000 person in Great Britain).

The UK has implemented the now repealed Clinical Trials Directive 2001/20/EC into national law through the Medicines for Human Use (Clinical Trials) Regulations 2004 (as amended). The extent to which the regulation of clinical trials in the UK will mirror the new Clinical Trials Regulation now that has come into effect is not yet known, however the MHRA has conducted a consultation on a set of proposals designed to improve and strengthen the UK clinical trials legislation.

Personal Data Processing

The collection, use, transfer, disclosure, retention, security and other processing of personal data (including, without limitation, clinical trial data and other personal health data) (collectively, "Process" or "Processing") may be subject to independent and overlapping data security and privacy regulatory frameworks in the various jurisdictions in which we operate. These frameworks are evolving and may impose potentially conflicting obligations. For example, in the EEA, the European Union's General Data Protection Regulation (EU) 2016/679, which became effective May 25, 2018, governs the Processing of personal data. The GDPR applies to any company established in the EEA and to companies established outside the EEA that Process personal data in connection with the offering of goods or services to data subjects in the EEA or the monitoring of the behavior of data subjects in the EEA. The GDPR enhances data protection obligations for data controllers (such as clinical trial sponsors) of personal data, including stringent requirements relating to the consent of data subjects, expanded disclosures about how personal data is used, requirements to conduct data protection impact assessments for "high risk" Processing, expanded the scope of rights data subjects can exercise, limitations on retention of personal data, special provisions for "sensitive information" including health and genetic information of data subjects, mandatory data breach notification and "privacy by design" requirements, and direct obligations on service providers acting as data processors. The GDPR also imposes strict rules on the transfer of personal data outside of the EEA to countries that do not ensure an adequate level of protection for personal data, like the U.S. Such transfers of personal data outside of the EEA require the use of a valid "transfer mechanism" and, in many cases, the implementation of supplementary technical, organizational and/or contractual measures (see below). Failure to comply with the requirements of the GDPR and the related national data protection laws of the EEA Member States may result in fines up to 20 million euros or 4% of a company's global annual revenues for the preceding financial year, whichever is higher. Moreover, the GDPR grants data subjects the right to request deletion of personal data in certain circumstances, and claim material and non-material damages resulting from infringement of the GDPR.

In addition, further to the UK's exit from the EU on January 31, 2020, the GDPR ceased to apply in the UK at the end of the transition period on December 31, 2020. However, as of January 1, 2021, the UK's European Union (Withdrawal) Act 2018 incorporated the GDPR (as it existed on December 31, 2020 but subject to certain UK specific amendments) into UK law, referred to as the UK GDPR. The UK GDPR and the UK Data Protection Act 2018 set out the UK's data protection regime, which is independent from but aligned to the EU's data protection regime. Non-compliance with the UK GDPR may result in monetary penalties of up to £17.5 million or 4% of worldwide revenue, whichever is higher. Although the UK is regarded as a third country under the EU's GDPR, the European Commission ("EC") has now issued a decision recognizing the UK as providing adequate protection under the EU GDPR and, therefore, transfers of personal data originating in the EU to the UK remain unrestricted. Like the EU GDPR, the UK GDPR restricts personal data transfers outside the UK to countries not regarded by the UK as providing adequate protection. The UK government has confirmed that personal data transfers from the UK to the EEA remain free flowing.

To enable the transfer of personal data outside of the EEA or the UK, adequate safeguards must be implemented in compliance with European and UK data protection laws. On June 4, 2021, the EC issued new forms of standard contractual clauses for data transfers from controllers or processors in the EU/EEA (or otherwise subject to the GDPR) to

controllers or processors established outside the EU/EEA (and not subject to the GDPR). The new standard contractual clauses replace the standard contractual clauses that were adopted previously under the EU Data Protection Directive. The UK is not subject to the EC's new standard contractual clauses but has published a UK-specific transfer mechanism, the International Data Transfer Agreement, which will enable transfers from the UK. It is currently awaiting Parliamentary approval and is likely to enter into force on 21 March 2021. We will be required to implement these new safeguards when conducting restricted data transfers under the EU and UK GDPR and doing so will require significant effort and cost.

In the United States, there are a broad variety of data protection laws and regulations that may apply to our activities such as state data breach notification laws, state personal data privacy laws (for example, the California Consumer Privacy Act of 2018 ("CCPA"), state health information privacy laws, and federal and state consumer protection laws. In California, the CCPA was enacted in June 2018, became effective on January 1, 2020, and became subject to enforcement by the California Attorney General's office on July 1, 2020. The CCPA broadly defines personal information, and creates new individual privacy rights and protections for California consumers (as defined in the law), places increased privacy and security obligations on entities handling personal data of consumers or households, and provides for civil penalties for violations and a private right of action for data breaches. The CCPA requires covered business to provide certain disclosures to consumers about its data collection, use and sharing practices, and to provide affected California residents with ways to opt-out of certain sales or transfers of personal information. While there is a broad exception for protected health information that is subject to HIPAA as well as clinical trial information, the CCPA may impact certain of our personal information processing activities if we become a "Business" regulated by the scope of the CCPA.

In addition to the CCPA, new privacy and data security laws have been proposed in more than half of the states in the U.S. and in the U.S. Congress, reflecting a trend toward more stringent privacy legislation in the U.S., which trend may accelerate depending on the new U.S. presidential administration. The effects of the CCPA, and other similar state or federal laws, are potentially significant and may require us to modify our data processing practices and policies and to incur substantial costs and potential liability in an effort to comply with such legislation.

Given the breadth and depth of changes in data protection obligations, achieving and maintaining compliance with applicable data protection laws and regulations such as the GDPR, UK GDPR and CCPA will require significant time, resources and expense, and we may be required to put in place new or additional mechanisms to ensure compliance with current, evolving and new data protection requirements. This may be an onerous undertaking and adversely affect our business, financial condition, results of operations and prospects.

Rest of the World Regulation

For other countries outside of the EEA, the UK and the United States, such as countries in Eastern Europe, Latin America or Asia, the requirements governing the conduct of clinical trials, privacy, information security, product licensing, pricing and reimbursement vary from country to country. Additionally, the clinical trials must be conducted in accordance with GCP requirements and the applicable regulatory requirements and the ethical principles that have their origin in the Declaration of Helsinki.

Employees and Human Capital

As of March 1, 2022, we and our subsidiaries had an aggregate of 90 full-time employees and 109 contractors. A contractor is defined as anyone directly contracted for a certain number of hours or days or in respect of a particular project. This does not include anyone that is engaged on an ad-hoc basis or contracted through a CRO or other firm without a direct contract. 37 of our employees have M.D. or Ph.D. degrees. Within our workforce, 47 employees are engaged in research and development and 43 are engaged in business development, finance, legal, and general management and administration. None of our employees are represented by labor unions or covered by collective bargaining agreements. We consider our relationship with our employees to be good.

Our human capital resources objectives include, as applicable, identifying, recruiting, retaining, incentivizing and integrating our existing and new employees, advisors and consultants. The principal purposes of our equity and cash incentive plans are to attract, retain and reward personnel through the granting of stock-based and cash-based compensation awards, in order to increase shareholder value and the success of our company by motivating such individuals to perform to the best of their abilities and achieve our objectives. We also seek to align the incentives of the operational teams at our subsidiaries with our business objectives by employing incentivization agreements with such individuals.

As a global company, much of our success is rooted in the diversity of our teams and our commitment to inclusion. We value diversity at all levels and continue to focus on extending our diversity and inclusion initiatives across our entire workforce, from working with managers to develop strategies for building diverse teams to promoting the advancement of leaders from different backgrounds.

Item 1A. Risk Factors

Our business involves significant risks, some of which are described below. You should carefully consider the risks described below, as well as the other information in this Annual Report on Form 10-K and in other documents we file with the SEC, including our financial statements and the related notes and "Management's Discussion and Analysis of Financial Condition and Results of Operations." The occurrence of any of the events or developments described below could have a material adverse effect on our business, financial condition, results of operations, growth prospects and stock price. In such an event, the market price of our ADSs could decline, and you may lose all or part of your investment. Additional risks and uncertainties not presently known to us or that we currently deem immaterial may also impair our business operations and the market price of our ADSs.

Risks Related to our Business Model and Structure

We may not be successful in our efforts to use our differentiated asset-centric business model to build a pipeline of product candidates with commercial value.

A key element of Centessa's strategy is to use our differentiated asset-centric business model to build, from the bottom-up, a research and development engine to source and develop high conviction programs, product candidates, technologies or intellectual property that we believe are novel, employ differentiated mechanisms of action, are more advanced in development than competitors, or have a combination of these attributes to ultimately deliver impactful medicines to patients. We face significant competition in sourcing such high conviction programs, product candidates, technologies or intellectual property, partnering with founder-subject matter experts with high conviction assets that follow well elucidated biological pathways, seeking appropriate strategic partners (including founder-subject matter experts) and licensing and acquisition opportunities, and the negotiation process is time-consuming and complex. We may not be successful in our efforts in building a pipeline of high conviction product candidates for the treatment of various diseases and disorders through acquisitions, licensing or through internal development or in progressing these product candidates through clinical development. Although we have initially combined a portfolio of ten asset-centric companies, each a Centessa Subsidiary, that are developing high conviction programs with clear biological rationale and, through our Centessa Subsidiaries, our research and development efforts to date have resulted in our identification, discovery and preclinical and clinical development of certain of our product candidates, these product candidates may not be safe or effective treatments or therapies in humans, and we may not be able to develop any other product candidates. Although we analyze whether we can replicate scientific results observed prior to our acquisition or investment in a product candidate, we may not be successful in doing so after our investment. Our asset-centric business model is evolving and may not succeed in building a pipeline of product candidates. Even if we are successful in building our pipeline of product candidates, the potential product candidates that we identify may not be suitable for clinical development or generate acceptable clinical data in humans, including as a result of unacceptable toxicity or other characteristics that indicate that they are unlikely to receive marketing approval from the FDA, or other regulatory authorities or achieve market acceptance. If we do not successfully develop and commercialize product candidates, we will not be able to generate product revenue in the future, which likely would result in significant harm to our financial position and adversely affect the price of our ADSs.

As part of our business strategy, we may expand our product candidate pipeline through in-licenses or acquisitions of discovery or development-stage assets or programs, which entails additional risk to us. While we believe our asset-centric model offers an attractive platform for these transactions and for founder subject-matter experts and potential partners, our model is unique and we may not be able to attract or execute transactions with founder-subject matter experts, sellers, licensors or collaborators who may choose to divest to or grant license to companies that employ more traditional licensing and collaboration approaches. Identifying, selecting, and acquiring promising product candidates requires substantial technical, financial and human resources expertise. Efforts to do so may not result in the actual acquisition or license of a successful product candidate, potentially resulting in a diversion of our management's time and the expenditure of our resources with no resulting benefit. For example, if we are unable to identify programs that ultimately result in approved products, we may spend material amounts of our capital and other resources evaluating, acquiring, and developing product candidates that ultimately do not provide a return on our investment. We may terminate programs in the future if they do not meet our criteria for advancement.

A single or limited number of subsidiaries, developmental assets or product candidates may comprise a large proportion of our value.

A large proportion of our value may at any time reside in a limited number of our subsidiaries and/or developmental assets or product candidates. Our consolidated financial condition and prospects may be materially diminished if the clinical development or potential commercialization prospects of one of our product candidates or programs or one or more of the intellectual property rights held by us become impaired. Furthermore, a large proportion of our consolidated revenue may at any time be derived from one, or a small number of, licensed technologies, and termination or expiration of licenses to these technologies would likely have a material adverse effect on our consolidated revenue. Any material adverse impact on the value of intellectual property rights or the clinical development of product candidates or programs, could have a material adverse effect on our consolidated business, financial condition, results of operations or prospects.

We may expend our limited resources to pursue a particular product candidate or indication and fail to capitalize on product candidates or indications that may be more profitable or for which there is a greater likelihood of success.

Because we have limited financial and managerial resources, we must focus on a limited number of research programs and product candidates and on specific indications. As a result, we may forego or delay pursuit of opportunities with other product candidates or for other indications that later prove to have greater commercial potential, or we may fail to recognize or acquire assets that may be more promising than those we acquire. Our resource allocation decisions may cause us to fail to capitalize on viable commercial products or profitable market opportunities. Our spending on current and future identification, discovery, and preclinical development programs and product candidates for specific indications may not yield any commercially viable products.

We face challenges, risks and expenses related to the integration of the operations of our asset-centric Centessa Subsidiaries, as well as the management of the expected growth in the scale and complexity of our operations.

In January 2021, we acquired the ownership interests of our Centessa Subsidiaries where our current development programs reside. These Centessa Subsidiaries have historically operated as independent entities with generally separate management and operational teams. As a result, we will need to expend significant resources and efforts in integrating the operations of these Centessa Subsidiaries into our larger organization, and such integration activities may be challenging due to the number of Centessa Subsidiaries acquired and the heterogeneity of their historical operations. For example, these Centessa Subsidiaries' programs span a range of therapeutic modalities and are designed to address a variety of disease areas. In addition, the Centessa Subsidiaries have conducted their business in a variety of jurisdictions in the U.S. and Europe. All of our Centessa Subsidiaries have had historical relationships with different licensors, contract organizations and other third-party vendors.

Each Centessa Subsidiary has historically had its own operational, legal, financial and management controls, reporting systems and procedures and integrating such controls, reporting systems and procedures may be challenging and we may not be successful in doing so. We believe certain synergies may be achieved by harmonizing the operational, legal, financial and management controls, reporting systems and procedures but we may not be successful in our harmonization efforts and this may result in not only being unable to take advantage of synergies but expose us to additional operational, legal and financial risks and exposures associated with several levels of disparate systems and procedures. With limited resources, historically the Centessa Subsidiaries may not have dedicated sufficient resources to ensure its operational, legal, financial and management controls, reporting systems, compliance and other procedures meet required standards and this may expose us to historical non-compliance investigations and liabilities, which may have a material adverse effect on our operations. We also may face difficulties with the integration of our Centessa Subsidiaries if there is disagreement between the founder-subject matter experts and management of Centessa with respect to the development of the Centessa Subsidiary programs.

As of March 1, 2022, we had an aggregate of 90 employees and 109 contractors. We may not be successful in integrating and retaining such employees and consultants or find replacements which could have a material adverse effect on our ability to develop and commercialize our programs and product candidates. As our development and commercialization plans and strategies develop, and as we refine our operations as a public company, we expect to need additional managerial, operational, sales, marketing, legal, financial and other personnel. Future growth would impose significant added responsibilities on members of management, including:

- identifying, recruiting, integrating, maintaining and motivating additional employees;

- managing our internal development efforts effectively, including the clinical and FDA review process for our product candidates, while complying with our contractual obligations to contractors and other third parties; and
- improving our operational, legal, financial and management controls, reporting systems and procedures.

Our future financial performance and our ability to commercialize any product candidates that are approved for marketing will depend, in part, on our ability to effectively manage any future growth, and our management may also have to divert a disproportionate amount of its attention away from day-to-day activities in order to devote a substantial amount of time to managing these growth activities.

We currently rely, and for the foreseeable future will continue to rely, in substantial part on certain independent organizations, advisors and consultants to provide certain services, including substantially all aspects of regulatory approval, clinical trial management and manufacturing. There can be no assurance that the services of independent organizations, advisors and consultants will continue to be available to us on a timely basis when needed, or that we can find qualified replacements. In addition, if we are unable to effectively manage our outsourced activities or if the quality or accuracy of the services provided by consultants is compromised for any reason, our clinical trials may be extended, delayed or terminated, and we may not be able to obtain regulatory approval of our product candidates or otherwise advance our business. There can be no assurance that we will be able to manage our existing consultants or find other competent outside contractors and consultants on economically reasonable terms, or at all.

If we are not able to effectively expand our organization by hiring new employees and expanding our groups of consultants and contractors, we may not be able to successfully implement the tasks necessary to further develop and potentially commercialize our product candidates and, accordingly, may not achieve our research, development and commercialization goals. We may not have sufficient funding to support our expansion.

Our reliance on a central team consisting of a limited number of employees who provide various administrative, research and development, and other services across our organization presents operational challenges that may adversely affect our business.

As of March 1, 2022, our central team consisted of 54 full-time equivalent employees, upon whom we rely for various operational, administrative, research and development, and other support services shared among our other operating subsidiaries. We also have consultants who we rely on for research and development, business development, and other services. While we believe this structure enables us to reduce certain infrastructure costs, the small size of our centralized team may limit our ability to devote adequate personnel, time, and resources to support the operations of all of our subsidiaries, including their operational, research and development activities, and the management of compliance, financial, accounting, and reporting matters. If our centralized team fails to provide adequate operational, administrative, research and development, or other services across our entire organization, our business, financial condition, and results of operations could be harmed.

Some of our officers currently serve, and in the future may serve, as directors or officers of our Centessa Subsidiaries, and, as a result, have and may continue to have, statutory, fiduciary and other duties to our subsidiaries causing conflicts of interest with respect to their duties to us and their duties to our subsidiaries and in determining how to devote themselves to our affairs and the affairs of our subsidiaries. Our subsidiaries' partners may also disagree with the sufficiency of resources that we provide to each Centessa Subsidiary.

Certain of our officers, including Saurabh Saha, M.D., Ph.D., our Chief Executive Officer, Marella Thorell, our Chief Accounting Officer, Iqbal Hussain, our General Counsel, David Grainger, PhD, our Chief Innovation Officer and David Chao, PhD, our Chief Administrative Officer are directors and/or officers of certain Centessa Subsidiaries and, as a result, have fiduciary or other duties both to us and our subsidiaries. Dr. Saha, Ms. Thorell, Mr. Hussain, Dr. Grainger and Dr Chao do not receive any additional compensation for their service as directors of our Centessa Subsidiaries. The conflicts of interest that arise from such duties could interfere with the management of our subsidiaries and their programs and product candidates, or result in disagreements with our subsidiaries' partners. For example, an individual who is both a director of one of our subsidiaries and an officer of Centessa owes statutory and fiduciary duties to the Centessa Subsidiary and to us, and such individual may encounter circumstances in which his or her decision or action may benefit the Centessa Subsidiary while having a detrimental impact on Centessa, or vice versa, or on another Centessa Subsidiary, including one for which he or she also serves as a director. Further, in the future, certain of our officers may serve as officers and directors of our Centessa Subsidiaries. Any such individual would need to allocate his or her time to responsibilities owed to Centessa and each of the Centessa Subsidiaries for which he or she serves as an officer or director, and would make

decisions on behalf of one entity that may negatively impact others. In addition, disputes could arise between us and our Centessa Subsidiary's partners regarding a conflict of interest or perceived conflict of interest arising from the overlap between the officers and directors of the Centessa Subsidiary and those of Centessa. These partners also may disagree with the amount and quality of resources that are devoted to the Centessa Subsidiary they are invested in. Any such disputes or disagreements could distract our management, interfere with our relations with our partners, and take significant time to resolve, which could disrupt the development of our product candidates, delay our potential commercialization efforts, result in increased costs or make it less likely that other third parties will choose to partner with us in the future.

Our Centessa Subsidiaries are party to certain agreements that provide our licensors and/or collaborators with rights that could delay or impact the ability of our Centessa Subsidiaries to sell assets, or enter into strategic alliances, collaborations or licensing arrangements with other third parties or the potential sale of our Centessa Subsidiaries.

Each of our Centessa Subsidiaries licenses intellectual property from third parties and we expect such practice to continue in the future. These third parties have certain rights that could delay collaboration, licensing or other arrangements with another third party, and the existence of these rights may adversely impact our ability to attract an acquirer or partner. These rights include rights of negotiation and fees payable upon a sale of assets or change of control of a Centessa Subsidiary that are contained in license agreements.

For example, each of Palladio, Pega-One, ApcinteX, Z Factor and Morphogen-IX, is party to certain license agreements that provide for payments upon satisfaction of milestones, royalty payments, diligence obligations and other customary terms contained in agreements for the in-license of programs and their intellectual property.

We may incorporate, form or otherwise acquire additional subsidiaries and enter into similar agreements with future counterparties, or our Centessa Subsidiaries may enter into further agreements, that in each case may contain similar provisions or other terms that are not favorable to us.

Preclinical and clinical development is a long, expensive and uncertain process, and we may terminate one or more of our current preclinical and/or clinical development programs.

We may determine that certain product candidates or programs (preclinical and/or clinical) do not have sufficient potential to warrant the continued allocation of resources toward them. Accordingly, we may elect to terminate our programs for and, in certain cases, our licenses to, such product candidates or programs. If we terminate programs in which we have invested significant resources, we will have expended resources on a program that will not provide a full return on our investment and missed the opportunity to have allocated those resources to potentially more productive uses. In addition, program termination may result in significant additional wind-down related costs being incurred including penalties, redundancy and severance and professional fees and may expose us to additional risks including contractual breach and employment termination claims and may divert a disproportionate amount of management time. For example, we have recently determined to discontinue the small molecule EGFR Exon20 insertion mutation inhibitor program and C797S mutation inhibitor program for the treatment of Non-Small Cell Lung Cancer (NSCLC) and discontinue internal funding for the dual-STAT3/5 degrader program in Acute Myeloid Leukemia (AML). We may not be able to terminate a clinical program with an ongoing clinical trial on medical and other grounds and such termination may expose us to additional risks including regulatory risk.

Risks Related to our Financial Position, Need for Additional Capital and Growth Strategy

We, and our Centessa Subsidiaries have incurred net losses since inception, and we expect to continue to incur losses for the foreseeable future and may never achieve or maintain profitability.

We and our Centessa Subsidiaries have incurred significant net losses since inception, have not generated any revenue from product sales to date, and financed operations primarily through private placements of preferred shares and debt. Centessa Pharmaceuticals plc is a newly incorporated holding company for all of the Centessa Subsidiaries in our organization, and we expect to incur significant losses for the foreseeable future. As an organization, we have devoted substantially all of our efforts to research and development, including clinical and preclinical development of our product candidates, as well as to building out our team. We expect that it could be several years, if ever, before we have a commercialized product candidate. We expect to continue to incur significant expenses and increasing operating losses for the foreseeable future. The net losses we incur may fluctuate significantly from quarter to quarter each financial year. We anticipate that our expenses will increase substantially if, and as, we:

- continue our research and the preclinical and clinical development of our product candidates, including our ongoing and planned clinical trials;

- initiate additional clinical trials and preclinical studies for our other product candidates, including those in our pipeline that are expected to advance into the clinic in the near future; if any of our product candidates advance through and complete late-stage development, prepare and submit marketing applications with the FDA and comparable regulatory authorities;
- experience any delays or encounter any issues with any of the above, including but not limited to failed studies, complex results, safety issues or other regulatory challenges;
- seek to discover and develop additional product candidates;
- establish a sales, marketing and distribution infrastructure to commercialize any product candidates for which we may obtain marketing approval;
- maintain, expand and protect our intellectual property portfolio;
- fulfill future potential payment obligations under our incentivization agreements with each Centessa Subsidiary; and
- acquire or in-license other product candidates and technologies.

To become and remain profitable, we must develop and eventually commercialize product candidates with significant market potential. This will require us to be successful in a range of challenging activities, including completing preclinical testing and clinical trials of our product candidates, obtaining marketing approval for these product candidates, manufacturing, marketing and selling those products for which we may obtain marketing approval and satisfying any post-marketing requirements. We may never succeed in any or all of these activities and, even if we do, we may never generate revenues that are significant or large enough to achieve profitability. If we do achieve profitability, we may not be able to sustain or increase profitability on a quarterly or annual basis. Our failure to become and remain profitable would decrease the value of our company and could impair our ability to raise capital, maintain our research and development efforts and expand our business or continue our operations. A decline in the value of our company could cause you to lose all or part of your investment.

Our limited operating history may make it difficult for investors to evaluate our business, operations and prospects.

We are a newly incorporated holding company, incorporated in October 2020. Our wholly-owned Centessa Subsidiaries are each in the development stage and have had limited operating histories. Our operations to date have been limited to organizing and staffing our company, business planning, developing our operating model, raising capital, acquiring our technology, identifying potential product candidates, establishing collaborations and undertaking preclinical studies and clinical trials of our most advanced product candidates. As an organization, we have not yet demonstrated a track record of completing Phase 3 trials of our product candidates, obtaining marketing approvals, manufacturing a commercial-scale product or conducting sales and marketing activities necessary for successful commercialization. Consequently, any predictions made about our future success or viability may not be as accurate as they could be if we had a longer operating history.

In addition, as a new business, we may encounter unforeseen expenses, difficulties, complications, delays and other known and unknown factors. We will need to transition from a company with a research focus to a company that is also capable of supporting commercial activities. We may not be successful in such a transition.

We have never generated revenue from product sales and may never be profitable.

Our ability to generate revenue from product sales and achieve profitability depends on our ability, alone or with collaborative partners, to successfully complete the development of, and obtain the regulatory approvals necessary to commercialize, our product candidates. We do not anticipate generating revenues from product sales for the next several years, if ever. Our ability to generate future revenues from product sales depends heavily on our, or our collaborators', success in:

- completing research and preclinical and clinical development of our product candidates;
- seeking and obtaining regulatory and marketing approvals for product candidates for which we complete clinical trials;
- in-licensing, acquiring, discovering or otherwise expanding our pipeline of product candidates for clinical development;

- launching and commercializing product candidates for which we obtain regulatory and marketing approval by establishing a sales force, marketing and distribution infrastructure or, alternatively, collaborating with a commercialization partner;
- qualifying for adequate coverage and reimbursement by government and third-party payors for our product candidates;
- maintaining and enhancing a sustainable, scalable, reproducible and transferable manufacturing process for our product candidates;
- establishing and maintaining supply and manufacturing relationships with third parties that can provide adequate, in both amount and quality, products and services to support clinical development and the market demand for our product candidates, if approved;
- obtaining market acceptance of our product candidates as a viable treatment option;
- addressing any competing technological and market developments;
- implementing additional internal systems and infrastructure, as needed;
- negotiating favorable terms in any collaboration, licensing or other arrangements into which we may enter and performing our obligations in such collaborations;
- maintaining, protecting and expanding our portfolio of intellectual property rights, including patents, trade secrets and know-how;
- avoiding and defending against third-party interference or infringement claims; and
- attracting, hiring and retaining qualified personnel.

Even if one or more of the product candidates that we develop is approved for commercial sale, we anticipate incurring significant costs associated with commercializing any approved product candidate. Our expenses could increase beyond expectations if we are required by the FDA, the EMA, the Medicines and Healthcare products Regulatory Agency ("MHRA"), or other regulatory authorities to perform clinical and other studies in addition to those that we currently anticipate. Even if we are able to generate revenues from the sale of any approved products, we may not become profitable and may need to obtain additional funding to continue operations.

We will need substantial additional funds to advance development of our product candidates, and we cannot guarantee that we will have sufficient funds available in the future to develop and commercialize our current or future product candidates.

Developing pharmaceutical products, including conducting preclinical studies and clinical trials, is a very time-consuming, expensive and uncertain process that takes years to complete. We will need substantial additional funds to expand our development, regulatory, manufacturing, marketing and sales capabilities or contract with other organizations in order to enter and advance our product candidates through preclinical studies and clinical trials. For example, in October 2021 we entered into the Oberland Capital Financing Agreement (See Note 6 – "Debt" for more information). Our Centessa Subsidiaries have used substantial funds in their research and development programs and will continue to expend significant resources to advance their programs and product candidates.

As of December 31, 2021, we had $595.1 million in cash and cash equivalents. In October 2021, we entered into a financing agreement with funds managed by Oberland Capital and drew down an initial tranche of funding in the amount of $75.0 million. Based on the current operating plan, the Company expects cash and cash equivalents as of December 31, 2021 of $595.1 million, to fund its operations into early 2024 without drawing on the remaining available tranches under the Oberland Capital financing agreement. Our future capital requirements and the period for which we expect our existing resources to support our operations may vary significantly from what we expect, and changing circumstances, some of which may be beyond our control, could cause us to consume capital significantly faster than we currently anticipate, and we may need to seek additional funds sooner than planned. Our monthly spending levels vary based on new and ongoing development and corporate activities. Because the length of time and activities associated with successful development of our product candidates is highly uncertain, we are unable to estimate the actual funds we will require for development and any approved marketing and commercialization activities.

We currently expect to use our cash resources to fund the continued development and pre-commercialization costs of our clinical-stage product candidates; to fund continued development of the other programs in our pipeline, including

designing and conducting preclinical studies and clinical trials, as well as funding discovery, manufacturing, research and development; to fund the acquisition of and drug development activities related to new programs; although we have no material agreements, commitments or understandings with respect to any in-license or acquisition, we have and plan to continue to evaluate such opportunities and engage in related discussions with other business entities from time to time; and the remainder for working capital and other general corporate purposes.

To execute our business plan, we will need, among other things, to:

- obtain the human and financial resources necessary to develop, test, obtain regulatory approval for, manufacture and market our product candidates;
- build and maintain a strong intellectual property portfolio and avoid infringing intellectual property of third parties;
- establish and maintain successful licenses, collaborations and alliances;
- satisfy the requirements of clinical trial protocols, including patient enrollment;
- establish and demonstrate the clinical efficacy and safety of our product candidates;
- obtain regulatory approvals;
- manage our spending as costs and expenses increase due to preclinical studies and clinical trials, regulatory approvals, commercialization, legal and regulatory compliance, and increased operations;
- obtain additional capital to support and expand our operations; and
- market our products to achieve acceptance and use by the medical community in general.

We do not expect to realize revenue from product sales, milestone payments or royalties in the foreseeable future, if at all. Our revenue sources are, and will remain, extremely limited unless and until our product candidates are clinically tested, approved for commercialization and successfully marketed and/or we sell, out-license or otherwise divest certain of our assets.

We will be required to seek additional funding in the future and intend to do so through either public or private equity offerings or debt financings, credit or loan facilities or a combination of one or more of these funding sources. Attempting to secure additional financing may divert our management from our day-to-day activities, which may adversely affect our ability to develop our product candidates. Our ability to raise additional funds will depend on financial, economic and other factors, many of which are beyond our control. Additional funds may not be available to us on acceptable terms or at all. If we raise additional funds by issuing equity securities, our shareholders will suffer dilution and the terms of any financing may adversely affect the rights of our shareholders. In addition, as a condition to providing additional funds to us, future investors may demand, and may be granted, rights superior to those of existing shareholders. Debt financing, if available, may involve restrictive covenants limiting our flexibility in conducting future business activities, and, in the event of insolvency, debt holders would be repaid before holders of equity securities received any distribution of corporate assets.

If we raise additional funds through collaborations, strategic alliances or licensing arrangements with third parties, we may have to relinquish valuable rights to our technologies, future revenue streams, research programs or product candidates or to grant licenses on terms that may not be favorable to us. Certain amounts of such additional funds raised may need to be used to pay third parties in respect of obligations we owe to them including to our licensors, under Incentivization Agreements (see Contractual Obligations and Other Commitments) and Oberland Capital. If we are unable to raise additional funds through equity or debt financings when needed, we may be required to delay, reduce or terminate our product development or future commercialization efforts or grant rights to third parties to develop and market product candidates that we would otherwise prefer to develop and market ourselves.

Our credit facility and payment obligations under the Note Purchase Agreement, as amended ("NPA"), with Cocoon SA LLC, an affiliate of Oberland Capital (collectively, "Oberland Capital") as agent for the Purchasers, contain operating and financial covenants that restrict our business and financing activities, are subject to acceleration in specified circumstances and may adversely affect our financial position or results of operations and our ability to raise additional

capital which in turn may increase our vulnerability to adverse regulatory developments or economic or business downturns or which may result in Oberland Capital taking possession of our assets and disposing of any collateral.

Our credit facility with Oberland Capital contains restrictions that limit our flexibility in operating our business. Under the terms of the credit facility, we must maintain, and cause our subsidiaries to maintain, certain covenants, including with respect to limitations on new indebtedness, restrictions on the payment of dividends and maintenance of revenue levels. Our credit facility is collateralized by all of our assets including, among other things, our intellectual property.

Under the NPA, as amended, the Purchasers agreed to purchase, and the Company agreed to sell, tranches of secured notes in the aggregate principal amount of up to $300,000,000 as follows: (a) a secured note in the aggregate principal amount of $75,000,000 (the "First Purchase Note"), (b) on and after the Signing Date until September 30, 2023, at the Company's option, a secured note in the aggregate principal amount of $75,000,000 (the "Second Purchase Note"), (c) on and after the Signing Date until December 31, 2023, at the Company's option, a secured note in the aggregate principal amount of $50,000,000 (the "Third Purchase Note"), and (d) one or more secured notes in the aggregate principal amount of up to $100,000,000 at any time at the Company's and Purchasers' option, to be used to finance certain permitted acquisitions as described in the NPA (the "Fourth Purchase Notes" and collectively with the First Purchase Note, the Second Purchase Note and the Third Purchase Note, the "Notes"). The obligations of the Purchasers to purchase the Notes are subject to certain conditions precedent. On October 4, 2021 (the "First Purchase Date"), the Company issued the First Purchase Note. The Notes will mature on the six-year anniversary of the First Purchase Date, unless earlier accelerated under the terms of the NPA. At maturity, the Company must repay the outstanding principal amount of the Notes, together with any accrued and unpaid interest thereon and other outstanding obligations thereunder. Interest is payable quarterly during the term of the Notes at a rate per annum equal to the sum of (a) the greater of (i) LIBOR (which may be subject to replacement as contemplated by the NPA) and (ii) 0.25% and (b) 7.75% (which percentage is subject to adjustment as described in the NPA); provided that the interest rate shall never be less than 8.00%. The initial interest rate for the Notes is 8.00% per annum. The Company's obligations under the facility are secured by a first priority security interest in all assets of the Company and Guarantors, subject to variation in accordance with local law with respect to assets held by the Company and the Guarantors outside of the United States.

Starting on the date of the first commercial sale of lixivaptan, currently a product candidate under development by the Company, and ending on the tenth anniversary of the First Purchase Date, the Purchasers shall have the right to receive 1.00% (the "Revenue Participation Rate") of the first $200.0 million of worldwide net sales of lixivaptan in each calendar year, payable quarterly (the "Revenue Participation Payments"). The Revenue Participation Rate is subject to pro-rata increase if the Second Purchase Notes and/or the Third Purchase Notes are issued and shall not exceed 2.67%.

In addition, upon the first regulatory approval of any of the Company's product candidates by either the FDA or EMA, the Company is obligated to pay the Purchasers an amount equal to 30% of the aggregate principal amount issued under the Notes by the Company (the "Milestone Payment"). The Milestone Payment shall be paid in quarterly installments over five years beginning on the earlier of (i) the date of the first commercial sale following such regulatory approval; and (ii) the six month anniversary of such regulatory approval. The Milestone Payment is triggered one time only, and applies only to the Company's first product to obtain regulatory approval.

The Company may redeem all, but not less than all, of the outstanding Notes (if any) and pay all other outstanding obligations under the NPA. On the applicable date, the Company shall repurchase the Notes by paying an amount of up to (i) 175% of the principal amount issued under the Notes if such repurchase occurs on or prior to the third anniversary of the First Purchase Date, (ii) 185% of the principal amount issued under the Notes if such repurchase occurs between the third and sixth anniversaries of the First Purchase Date, and (iii) 205% of the principal amount issued under the Notes if such repurchase occurs thereafter, in each case less specified deductions and exclusions described in the NPA, including amounts paid by the Company to the Purchasers in respect of certain asset sale or strategic transactions, the interest payments, the Revenue Participation Payments and the Milestone Payments (the "Final Payment Amount").

On February 11 2022, we entered into an Amendment to Note Purchase Agreement and Waiver ("Amendment"). The Amendment contains a waiver of certain events of default and associated penalty interests under the NPA . The Amendment also provides that the Company is required to maintain a cash balance in an amount equal to 75% of the aggregate principal amount of all Notes, that have been issued on and from February 11, 2022. Also pursuant to the Amendment, the date for the Third Purchase Date to occur and the Commitment Termination Date are extended to December 31, 2023. The Amendment also provides that upon the sale of any of the Company's or any of its subsidiary's assets, if the Purchaser Agent elects to have the Company repurchase the Notes, such repurchase amounts will be subject to a $100 million deductible such that the Purchaser Agent will not collect any repurchase amounts until $100 million has

been received by the Company from such sale event. In addition, the reduced payment cap that is triggered by the Purchaser Agent opting into a repayment in the event of an asset sale extends to the second loan tranche, if drawn.

If we breach certain of our debt covenants and are unable to cure such breach within the prescribed period, or are not granted waivers in relation to such breach, it may constitute an event of default under the credit facility, giving Oberland Capital the right to require us to repay the then outstanding debt immediately, and Oberland Capital could, among other things, foreclose on the collateral granted to them to collateralize such indebtedness, if we are unable to pay the outstanding debt immediately. A breach of the covenants contained in the credit facility documents and the acceleration of its repayment obligations by Oberland Capital could have a material adverse effect on our business, financial condition, results of operations and prospects.

The credit facility and the Revenue Participation Payments and Milestone Payments contained therein could have important negative consequences to the holders of our securities. For example, a portion of our cash flow from operations will be needed to make payments to Oberland Capital and will not be available to fund future operations. Additionally, we may have increased vulnerability to adverse general economic and industry conditions. Payment requirements under the credit facility will increase our cash outflows if and when the conditions for payment are triggered. Our future operating performance is subject to market conditions and business factors that are beyond our control. If our cash inflows and capital resources are insufficient to allow us to make required payments, we may have to reduce or delay capital expenditures, sell assets or seek additional capital. If we raise funds by selling additional equity, such sale would result in dilution to our stockholders. There is no assurance that if we are required to secure funding, we can do so on terms acceptable to us, or at all.

If we engage in acquisitions or strategic partnerships, this may increase our capital requirements, dilute our shareholders, cause us to incur debt or assume contingent liabilities, and subject us to other risks.

As part of our asset-centric business model and strategy, we may engage in various acquisitions and strategic partnerships in the future, including licensing or acquiring new or complementary products, intellectual property rights, technologies, or businesses. For example, in October 2021, our Centessa Subsidiary, Orexia, entered into an exclusive collaboration agreement with Schrödinger. For more information, see "Recent Highlights and Program Updates". Any acquisition or strategic partnership may entail numerous risks, including:

- increased operating expenses and cash requirements;
- the assumption of indebtedness or contingent liabilities;
- the issuance of our equity securities which would result in dilution to our shareholders;
- assimilation of operations, intellectual property, products and product candidates of an acquired company, including difficulties associated with integrating new personnel;
- the diversion of our management's attention from our existing product programs and initiatives in pursuing such an acquisition or strategic partnership;
- retention of key employees, the loss of key personnel, and uncertainties in our ability to maintain key business relationships;
- risks and uncertainties associated with the other party to such a transaction, including the prospects of that party and their existing products or product candidates and regulatory approvals; and
- our inability to generate revenue from acquired intellectual property, technology and/or products sufficient to meet our objectives or even to offset the associated transaction and maintenance costs; and
- our assumption of liabilities of the acquired subsidiary or acquired assets.

In addition, if we undertake such a transaction, we may issue dilutive securities, assume or incur debt obligations, incur large one-time expenses and acquire intangible assets that could result in significant future amortization expense.

If we acquire additional assets and/or companies in the future, it could adversely affect our operating results and the value of our ADSs.

As part of our asset-centric business model and strategy, we may acquire additional assets and/or companies. Investments in our existing and any future subsidiaries and developmental assets involve numerous risks, including, but not necessarily limited to:

- risk of conducting research and development activities in new therapeutic areas or treatment modalities in which we have little to no experience;
- diversion of financial and managerial resources from existing operations;
- successfully negotiating a proposed acquisition, in-license or investment in a timely manner and at a price or on terms and conditions favorable to us;
- successfully combining and integrating a potential acquisition into our existing business to fully realize the benefits of such acquisition;
- the impact of regulatory reviews on a proposed acquisition, in-license or investment; and
- the assumption of liabilities of acquired subsidiaries and outcome of any legal proceedings that may be instituted with respect to the proposed acquisition, in-license or investment.

If we fail to properly evaluate potential acquisitions, in-licenses, investments or other transactions associated with the creation of new research and development programs or the maintenance of existing ones, we might not achieve the anticipated benefits of any such transaction, we might incur costs in excess of what we anticipate, and management resources and attention might be diverted from other necessary or valuable activities.

Risks Related to Our Business and the Clinical Development, Regulatory Review and Approval

Our product candidates are in various stages of development, including many in discovery and preclinical stages, and may fail in development or suffer delays that materially adversely affect their commercial viability.

We have no products on the market and most of our product candidates in our pipeline are in the early stages of development. For example, across our organization, we currently have four product candidates that are in clinical development—lixivaptan, developed by Palladio, imgatuzumab, developed by Pega-One, SerpinPC, developed by ApcinteX, and ZF874, developed by Z Factor. The remainder of our programs are in discovery or IND-enabling phases. Our ability to achieve and sustain profitability depends on obtaining regulatory approvals for, and successfully commercializing, our product candidates, either alone or with third parties. Before obtaining regulatory approval for the commercial distribution of our product candidates, we or a collaborator must conduct extensive preclinical tests and clinical trials to demonstrate the safety and efficacy of our drug product candidates and the safety, purity, and potency or efficacy, of our biologic product candidates. Preclinical testing and clinical trials are expensive, difficult to design and implement, can take many years to complete and are uncertain as to outcome. The start or end of a clinical study is often delayed or halted due to changing regulatory requirements, manufacturing challenges, required clinical trial administrative actions, slower than anticipated patient enrollment, changing standards of care, availability or prevalence of use of a comparative drug or required prior therapy, clinical outcomes or financial constraints. For instance, delays or difficulties in patient enrollment or difficulties in retaining trial participants can result in increased costs, longer development times or termination of a clinical trial. Clinical trials of a new product candidate require the enrollment of a sufficient number of patients, including patients who are suffering from the disease the product candidate is intended to treat and who meet other eligibility criteria. Rates of patient enrollment are affected by many factors, including the size of the patient population, the eligibility criteria for the clinical trial, the age and condition of the patients, the stage and severity of disease, the nature of the protocol, the proximity of patients to clinical sites and the availability of effective treatments for the relevant disease.

A product candidate can unexpectedly fail at any stage of preclinical and clinical development. The historical failure rate for product candidates is high due to scientific feasibility, safety, efficacy, changing standards of medical care and other variables. The results from preclinical testing or early clinical trials of a product candidate may not predict the results that will be obtained in later phase clinical trials of the product candidate. We, the FDA or other applicable regulatory authorities may suspend clinical trials of a product candidate at any time for various reasons, including a belief that subjects participating in such trials are being exposed to unacceptable health risks or adverse side effects. We may not have the financial resources to continue development of, or to enter into collaborations for, a product candidate if we

experience any problems or other unforeseen events that delay or prevent regulatory approval of, or our ability to commercialize, product candidates, including:

- negative or inconclusive results from our clinical trials or the clinical trials of others for product candidates similar to ours, leading to a decision or requirement to conduct additional preclinical testing or clinical trials or abandon a program;
- serious and unexpected drug-related side effects experienced by participants in our clinical trials or by individuals using drugs similar to our product candidates;
- delays in submitting Investigational New Drug applications ("INDs"), Clinical Trial Applications ("CTAs"), or comparable foreign applications or delays or failure in obtaining the necessary approvals from regulators to commence a clinical trial, or a suspension or termination of a clinical trial once commenced;
- conditions imposed by the FDA or comparable foreign authorities regarding the scope or design of our clinical trials;
- delays in enrolling or our inability to enroll research subjects in clinical trials;
- high drop-out rates of research subjects;
- inadequate supply or quality of product candidate components or materials or other supplies necessary for the conduct of our clinical trials;
- greater than anticipated clinical trial costs;
- poor effectiveness of our product candidates during clinical trials;
- unfavorable FDA or other regulatory agency inspection and review of a clinical trial site;
- failure of our third-party contractors or investigators to comply with regulatory requirements or otherwise meet their contractual obligations in a timely manner, or at all;
- delays and changes in regulatory requirements, policy and guidelines, including the imposition of additional regulatory oversight around clinical testing generally or with respect to our technology in particular;
- varying interpretations of data by the FDA and similar foreign regulatory agencies; or
- factors including any delays caused by the continuing impact of the COVID-19 global pandemic and future epidemics, pandemics and other macroeconomic considerations.

Some of the clinical trials performed to date were, and in the future we may conduct, open-label studies involving only a limited number of clinical sites and a limited number of patients. An "open-label" clinical trial is one where both the patient and investigator know whether the patient is receiving the investigational product candidate or either an existing approved drug or placebo. Most typically, open-label clinical trials test only the investigational product candidate and sometimes may do so at different dose levels. Open-label clinical trials are subject to various limitations that may exaggerate any therapeutic effect as patients in open-label clinical trials are aware when they are receiving treatment. Open-label clinical trials may be subject to a "patient bias" where patients perceive their symptoms to have improved merely due to their awareness of receiving an experimental treatment. Moreover, patients selected for early clinical studies often include the most severe sufferers and their symptoms may have been bound to improve notwithstanding the new treatment. In addition, open-label clinical trials may be subject to an "investigator bias" where those assessing and reviewing the physiological outcomes of the clinical trials are aware of which patients have received treatment and may interpret the information of the treated group more favorably given this knowledge. Given that our development programs for ApcinteX and Palladio have included open-label clinical trials, the results from these clinical trials may not be predictive of future clinical trial results with these or other product candidates when studied in a controlled environment with a placebo or active control.

We may not be successful in our efforts to identify, discover, in-license or otherwise acquire additional product candidates and may fail to capitalize on programs or product candidates that may be a greater commercial opportunity or for which there is a greater likelihood of success.

The success of our business depends upon our ability to identify, develop and commercialize product candidates. Research programs to identify new product candidates require substantial technical, financial and human resources. Although certain of our product candidates are currently in clinical or preclinical development, we may fail to identify other potential product candidates for clinical development for several reasons. For example, our research may be

unsuccessful in identifying potential product candidates or our potential product candidates may be shown to have harmful side effects, may be commercially impracticable to manufacture or may have other characteristics that may make the products unmarketable or unlikely to receive marketing approval.

Additionally, because we have limited resources, we may forego or delay pursuit of opportunities with certain programs or product candidates or for indications that later prove to have greater commercial potential. Our spending on current and future research and development programs may not yield any commercially viable products. If we do not accurately evaluate the commercial potential for a particular product candidate, we may relinquish valuable rights to that product candidate through strategic collaboration, licensing or other arrangements in cases in which it would have been more advantageous for us to retain sole development and commercialization rights to such product candidate. Alternatively, we may allocate internal resources to a product candidate in a therapeutic area in which it would have been more advantageous to enter into a partnering arrangement.

If any of these events occur, we may be forced to abandon our development efforts with respect to a particular product candidate or fail to develop a potentially successful product candidate, which could have a material adverse effect on our business, financial condition, results of operations and prospects.

Success in preclinical studies or early clinical trials may not be indicative of results obtained in later trials.

Results from preclinical studies or previous clinical trials are not necessarily predictive of future clinical trial results, and interim results of a clinical trial are not necessarily indicative of final results. The results generated to date in preclinical studies or clinical trials for our product candidates do not ensure that later preclinical studies or clinical trials will demonstrate similar results. Our product candidates may fail to show the desired safety and efficacy in clinical development despite demonstrating positive results in preclinical studies or having successfully advanced through initial clinical trials. Product candidates in later stages of clinical trials may fail to show the desired safety and efficacy traits despite having progressed through preclinical and earlier stage clinical trials. In later-stage clinical trials, we will likely be subject to more rigorous statistical analyses than in completed earlier stage clinical trials. In some instances, there can be significant variability in safety or efficacy results between different clinical trials of the same product candidate due to numerous factors, including changes in clinical trial procedures set forth in protocols, differences in the size and type of the patient populations, adherence to the dosing regimen and other clinical trial protocols, and the rate of dropout among clinical trial participants. We cannot guarantee that any of our clinical trials will be conducted as planned or completed on schedule, or at all. Clinical trials can fail at any stage of testing and failure may result from a multitude of factors, including, among other things, flaws in study design, dose selection issues, placebo effects, patient enrollment criteria and failure to demonstrate favorable safety or efficacy traits.

There is a high failure rate for small molecule drugs and biologic products proceeding through clinical development. Many companies in the pharmaceutical and biotechnology industries have suffered significant setbacks in late-stage clinical trials even after achieving promising results in preclinical testing and earlier-stage clinical trials. Data obtained from preclinical and clinical activities are subject to varying interpretations, which may delay, limit or prevent regulatory approval, and many companies that have believed their product candidates performed satisfactorily in preclinical studies and clinical trials have nonetheless failed to obtain marketing approval of their products. In addition, we may experience regulatory delays or rejections as a result of many factors, including due to changes in regulatory policy during the period of our product candidate development. Furthermore, the failure of any of our product candidates to demonstrate safety and efficacy in any clinical trial could negatively impact the perception of our other product candidates and/or cause the FDA or other regulatory authorities to require additional testing before approving any of our product candidates. Any such delays could materially and adversely affect our business, financial condition, results of operations and prospects.

We may encounter substantial delays or challenges in the initiation, conduct or completion of our clinical trials, and the results of clinical development are uncertain.

Before obtaining marketing approval from regulatory authorities for the sale of our product candidates, we must conduct extensive clinical trials to demonstrate the safety and efficacy of the product candidate for its intended indications. Clinical trials are expensive, time-consuming and uncertain as to outcome. We cannot guarantee that any clinical trials will be conducted as planned or completed on schedule, if at all. A failure of one or more clinical trials can occur at any stage of testing. Events that may prevent successful or timely completion of clinical development include:

- delay in completing preclinical studies;
- delays in reaching a consensus with regulatory authorities on trial design;

- delays in obtaining authorizations of INDs to commence a clinical trial;
- delays in reaching agreement or failing to agree on acceptable terms with prospective CROs, and clinical trial sites, the terms of which can be subject to extensive negotiation and may vary significantly among different CROs and clinical trial sites;
- delays in obtaining or failure to obtain Institutional Review Board ("IRB"), or independent ethics committee approval at each clinical trial site;
- delays in opening or failure to open a sufficient number of clinical trial sites and recruiting an adequate number of suitable patients to participate in our clinical trials;
- imposition of a clinical hold by regulatory authorities as a result of a serious adverse event, concerns with a class of product candidates or after an inspection of our clinical trial operations or trial sites;
- delays in having patients complete participation in a trial or return for post-treatment follow-up;
- occurrence of clinical trial sites deviating from clinical trial protocol or dropping out of a clinical trial;
- obtaining sufficient product supply of product candidate for use in preclinical studies or clinical trials from third-party suppliers;
- occurrence of serious adverse events associated with the product candidate that are viewed to outweigh its potential benefits;
- changes in regulatory requirements and guidance that require amending or submitting new clinical protocols; or
- macro factors such as the COVID-19 global pandemic and the Russia-Ukraine war.

Any inability to successfully complete preclinical and clinical development could result in additional costs to us or impair our ability to generate revenue from future drug sales and regulatory and commercialization milestones. In addition, if we make manufacturing or formulation changes to our product candidates, we may need to conduct additional testing to bridge our modified product candidate to earlier versions. Clinical trial delays could also shorten any periods during which we may have the exclusive right to commercialize our product candidates, if approved, or allow our competitors to bring comparable drugs to market before we do, which could impair our ability to successfully commercialize our product candidates and may harm our business, financial condition, results of operations and prospects.

Additionally, if the results of our clinical trials are inconclusive or if there are safety concerns or serious adverse events associated with our product candidates, we may:

- be delayed in obtaining marketing approval, if at all;
- obtain approval for indications or patient populations that are not as broad as intended or desired;
- obtain approval with labeling that includes significant use or distribution restrictions or safety warnings;
- be subject to additional post-marketing testing requirements;
- be required to perform additional clinical trials to support approval or be subject to additional post-marketing testing requirements;
- have regulatory authorities withdraw, or suspend, their approval of the drug or impose restrictions on its distribution in the form of a modified risk evaluation and mitigation strategy ("REMS") plan;
- be subject to the addition of labeling statements, such as warnings or contraindications;
- be sued; or
- experience damage to our reputation.

Our drug development costs will also increase if we experience delays in testing or obtaining marketing approvals. We do not know whether any of our preclinical studies or clinical trials will begin as planned, need to be restructured or be completed on schedule, if at all.

Further, we, the FDA or other regulatory authorities, or an IRB or ethics committee of the institutions in which our clinical trials are being conducted, or the Data Safety Monitoring Board for such trials, if any, may suspend or terminate our clinical trials. Such authorities may suspend or terminate a clinical trial at any time due to a number of factors,

including if it appears that we or our collaborators are failing to conduct a trial in accordance with regulatory requirements, including the FDA's current Good Clinical Practice ("GCP"), regulations, unforeseen safety issues or unacceptable health risks, failure to demonstrate a benefit from the product candidates, or if the FDA finds deficiencies in our INDs or the conduct of these trials. Therefore, we cannot predict with any certainty the schedule for commencement and completion of future clinical trials. If we experience delays in the commencement or completion of our clinical trials, or if we terminate a clinical trial prior to completion, the commercial prospects of our product candidates could be negatively impacted, and our ability to generate revenues from our product candidates may be delayed or eliminated entirely.

Even if we complete the necessary preclinical studies and clinical trials, the marketing approval process is expensive, time-consuming and uncertain and may prevent us from obtaining approvals for the commercialization of our product candidates.

Any product candidate we develop and the activities associated with its development and commercialization, including its design, testing, manufacture, safety, efficacy, recordkeeping, labeling, storage, approval, advertising, promotion, sale, and distribution, are subject to comprehensive regulation by the FDA and other regulatory authorities in the United States and by comparable authorities in other countries. Failure to obtain marketing approval for a product candidate will prevent us from commercializing the product candidate in a given jurisdiction. We have not received approval to market any product candidates from regulatory authorities in any jurisdiction and it is possible that none of the product candidates we are developing or may seek to develop in the future will ever obtain regulatory approval. We have no experience in submitting and supporting the applications necessary to gain marketing approvals and expect to rely on third-party CROs or regulatory consultants to assist us in this process. Securing regulatory approval requires the submission of extensive preclinical and clinical data and supporting information to the various regulatory authorities for each therapeutic indication to establish the product candidate's safety and efficacy. Securing regulatory approval also requires the submission of information about the product manufacturing process to, and inspection of manufacturing facilities by, the relevant regulatory authority. Any product candidates we develop may not be effective, may be only moderately effective, or may prove to have undesirable or unintended side effects, toxicities or other characteristics that may preclude its obtaining marketing approval or prevent or limit commercial use.

The process of obtaining marketing approvals is expensive, may take many years if additional clinical trials are required, if approval is obtained at all, and can vary substantially based upon a variety of factors, including the type, complexity, and novelty of the product candidates involved. Changes in marketing approval policies during the development period, changes in or the enactment of additional statutes or regulations, or changes in regulatory review for each submitted product application, may cause delays in the approval or rejection of an application. The FDA and comparable authorities in other countries have substantial discretion in the approval process and may refuse to accept any application or may decide that our data are insufficient for approval and require additional preclinical, clinical or other studies. This is particularly true for clinical trials in rare diseases, where the very small patient population makes it difficult or impossible to conduct traditional, adequate and well-controlled studies, and therefore the FDA or comparable foreign regulatory authorities are often required to exercise flexibility in approving therapies for such diseases. To the extent that the results of the trials are not satisfactory to the FDA or comparable foreign regulatory authorities for support of a marketing application, we may be required to expend significant resources, which may not be available to us, to conduct additional trials in support of potential approval of our product candidates. In addition, varying interpretations of the data obtained from preclinical and clinical testing could delay, limit, or prevent marketing approval of a product candidate. Any marketing approval that we may ultimately obtain could be limited or subject to restrictions or post-approval commitments that render the approved product not commercially viable.

If we experience delays in obtaining approval or if we fail to obtain approval of any product candidates we may develop, the commercial prospects for those product candidates may be harmed, and our ability to generate revenues will be materially impaired.

We may find it difficult to enroll patients in our clinical trials, which could delay or prevent us from proceeding with clinical trials of our product candidates.

Identifying and qualifying patients to participate in clinical trials of our product candidates is critical to our success. The timing of our clinical trials depends on our ability to recruit patients to participate in such trials as well as the completion of any required follow-up periods. Some of our product candidates are designed to target orphan indications. For example, Palladio is developing lixivaptan for the treatment of ADPKD and ApcinteX is developing SerpinPC for the treatment of hemophilia. Trials in orphan indications often take longer to enroll than trials for other indications due to the smaller patient population from which subjects can be recruited. We may experience delays in any of our future clinical

trials. If patients are unwilling to participate in our studies because of negative publicity from adverse events related to certain modalities utilized in one or more of our product candidates, competitive clinical trials for similar patient populations or for other reasons, the timeline for recruiting patients, conducting studies and obtaining regulatory approval of our product candidates may be delayed. delays could result in increased costs, delays in advancing our product candidates, delays in testing the effectiveness of our product candidates or termination of the clinical trials altogether.

We may not be able to identify, recruit and enroll a sufficient number of patients, or those with required or desired characteristics, to complete our clinical trials in a timely manner. Patient enrollment and trial completion is affected by factors including:

- size of the patient population and process for identifying subjects;
- design of the trial protocol;
- eligibility and exclusion criteria;
- perceived risks and benefits of the product candidate under study;
- perceived risks and benefits of approaches utilized by one or more of our product candidates to treatment of diseases;
- availability of competing therapies and clinical trials;
- severity of the disease under investigation;
- proximity and availability of clinical trial sites for prospective subjects;
- ability to recruit clinical trial investigators with the appropriate competencies and experience;
- ability to obtain and maintain subject consent;
- risk that enrolled subjects will drop out before completion of the trial;
- patient referral practices of physicians;
- ability to monitor subjects adequately during and after treatment; and
- factors we may not be able to control, such as current or potential pandemics that may limit patients, principal investigators or staff or clinical site availability (e.g., the COVID-19 pandemic) and geo-political conflicts such as the Russia-Ukraine war.

We plan to seek initial marketing approval in the United States and certain other major markets such as major countries in the EU, and the United Kingdom. We may not be able to initiate or continue clinical trials if we cannot enroll a sufficient number of eligible patients to participate in the clinical trials required by FDA, EMA, MHRA or other regulatory authorities. Our ability to successfully initiate, enroll and complete a clinical trial in any foreign country is subject to numerous risks unique to conducting business in foreign countries, including:

- difficulty in establishing or managing relationships with CROs, and physicians;
- difficulty in obtaining local regulatory approval to conduct clinical trials;
- different standards for the conduct of clinical trials;
- our inability to locate qualified local consultants, physicians and partners; and
- the potential burden of complying with a variety of foreign laws, medical standards and regulatory requirements, including the regulation of pharmaceutical and biotechnology products and treatment.

If we have difficulty enrolling a sufficient number of patients to conduct our clinical trials as planned, we may need to delay, limit or terminate ongoing or planned clinical trials, any of which would have an adverse effect on our business, financial condition, results of operations and prospects.

We are dependent on third parties having accurately generated, collected, interpreted and reported data from certain preclinical studies and clinical trials that were previously conducted for our product candidates.

We have licensed patent and other intellectual property rights from third parties and we may continue to seek and enter into similar licenses for future programs. In certain cases, we intend to rely on results of studies previously conducted by third parties to support our own development of these candidates. For example, the historical development of

imgatuzumab was conducted by Roche, the results from which Pega-One intends to utilize to support the further development of this program. In such cases, we may have no involvement with or control over the preclinical and clinical development of any of such product candidates prior to obtaining the in-license. Therefore, we would be dependent on these third parties having conducted their research and development in accordance with the applicable protocols, legal and regulatory requirements, and scientific standards; having accurately reported the results of all preclinical studies and clinical trials conducted with respect to such product candidates and having correctly collected and interpreted the data from these studies and trials. If these activities were not compliant, accurate or correct, the clinical development, regulatory approval or commercialization of our product candidates will be adversely affected.

In addition, our belief in the therapeutic potential of lixivaptan is based, in part, on experiences of Cardiokine in its development of this molecule for a hyponatremia indication, which included over 30 clinical trials. Cardiokine had previously submitted an NDA for lixivaptan for the hyponatremia indication, for which the FDA subsequently issued a complete response letter that cited certain product quality and safety issues and resulted in the agency's determination not to approve lixivaptan for hyponatremia. Palladio subsequently obtained feedback from the FDA, following which, the FDA agreed with Palladio that no additional non-clinical work would be required to support the commencement of clinical trials or an NDA submission for an ADPKD indication. While, the meeting minutes issued by the FDA stated that the FDA did not believe the mortality findings from the legacy Cardiokine BALANCE trial — treatment of hyponatremia in hospitalized patients with congestive heart failure —would pose a barrier to approval of lixivaptan for the treatment of ADPKD, there can be no assurance that the FDA will maintain such position with respect to the lixivaptan ADPKD program under development by Palladio. If the FDA requires additional development and testing of lixivaptan, including in the form of additional preclinical or clinical studies that we have not planned for, we would be required to expend additional resources and our developmental timelines for this candidate will be delayed.

We may be unable to obtain U.S. or foreign regulatory approval and, as a result, unable to commercialize our product candidates.

Our product candidates are subject to extensive governmental regulations relating to, among other things, research, testing, development, manufacturing, safety, efficacy, approval, recordkeeping, reporting, labeling, storage, packaging, advertising and promotion, pricing, marketing and distribution of drugs. Rigorous preclinical testing and clinical trials and an extensive regulatory approval process are required to be successfully completed in the U.S. and in many foreign jurisdictions before a new drug can be marketed. Satisfaction of these and other regulatory requirements is costly, time consuming, uncertain and subject to unanticipated delays. It is possible that none of the product candidates we may develop will obtain the regulatory approvals necessary for us or our collaborators to begin selling them. Regulatory authorities may also fail to approve the facilities or processes used to manufacture a product candidate, our dosing or delivery methods.

We have very limited experience in conducting and managing the clinical trials necessary to obtain regulatory approvals, including approval by the FDA. The time required to obtain FDA and other approvals is unpredictable but typically takes many years following the commencement of clinical trials, depending upon the type, complexity and novelty of the product candidate. The standards that the FDA and its foreign counterparts use when regulating us are not always applied predictably or uniformly and can change. Further, certain historical trials conducted with lixivaptan were conducted by a third party sponsor for an indication other than ADPKD. To the extent any data from historical trials are intended to support a marketing application for ADPKD, lesser weight may be applied to such data. Any analysis we perform on data from preclinical and clinical activities is subject to confirmation and interpretation by regulatory authorities, which could delay, limit or prevent regulatory approval. We may also encounter unexpected delays or increased costs due to new government regulations, for example, from future legislation or administrative action, or from changes in FDA policy during the period of product development, clinical trials and FDA regulatory review. It is impossible to predict whether legislative changes will be enacted, or whether FDA or foreign regulations, guidance or interpretations will be changed, or what the impact of such changes, if any, may be.

In certain cases in the future, we may develop therapies that may represent a new class of drug for which the FDA and its foreign counterparts have not yet established any definitive policies, practices or guidelines in relation to these drugs. For example, we may in the future develop product candidates that we believe are regulated as new drugs under the Federal Food, Drug, and Cosmetic Act, but the FDA could decide to regulate them or other products we may develop as biologics under the Public Health Service Act. The lack of policies, practices or guidelines may hinder or slow review by the FDA of any regulatory filings that we may submit. Moreover, the FDA may respond to these submissions by defining requirements we may not have anticipated. Such responses could lead to significant delays in the clinical development of our product candidates. In addition, because there may be approved treatments for some of the diseases for which we may

seek approval, in order to receive regulatory approval, we may need to demonstrate through clinical trials that the product candidates we develop to treat these diseases, if any, are not only safe and effective, but safer or more effective than existing products.

Any delay or failure in obtaining required approvals could have a material adverse effect on our ability to generate revenues from the particular product candidate for which we are seeking approval. Furthermore, any regulatory approval to market a product may be subject to limitations on the approved uses for which we may market the product or the labeling or other restrictions. In addition, the FDA has the authority to require a REMS plan as part of a new drug application (NDA), or biologics license application ("BLA"), or after approval, which may impose further requirements or restrictions on the distribution or use of an approved drug or biologic, such as limiting prescribing to certain physicians or medical centers that have undergone specialized training, limiting treatment to patients who meet certain safe-use criteria and requiring treated patients to enroll in a registry. These limitations and restrictions may limit the size of the market for the product and affect reimbursement by third-party payors.

We are also subject to numerous foreign regulatory requirements governing, among other things, the conduct of clinical trials, manufacturing and marketing authorization, pricing and third-party reimbursement. The foreign regulatory approval process varies among countries and may include all of the risks associated with FDA approval described above as well as risks attributable to the satisfaction of local regulations in foreign jurisdictions. Moreover, the time required to obtain approval may differ from that required to obtain FDA approval. Approval by the FDA does not ensure approval by regulatory authorities outside the U.S. and vice versa.

Interim, "top-line," and preliminary data from our clinical trials that we announce or publish from time to time may change as more patient data become available or as additional analyses are conducted, and as the data are subject to audit and verification procedures that could result in material changes in the final data.

From time to time, we may publish interim, "top-line," or preliminary data from our clinical studies. Interim data from clinical trials that we may complete are subject to the risk that one or more of the clinical outcomes may materially change as patient enrollment continues and more patient data become available. Preliminary or "top-line" data also remain subject to audit and verification procedures that may result in the final data being materially different from the preliminary data we previously published. As a result, interim and preliminary data should be viewed with caution until the final data are available. Material adverse changes between preliminary, "top-line," or interim data and final data could significantly harm our business prospects.

We may be unable to obtain orphan drug designation or exclusivity. If our competitors are able to obtain orphan drug exclusivity for products that constitute the same drug and treat the same indications as our product candidates, we may not be able to have competing products approved by the applicable regulatory authority for a significant period of time.

We have received orphan drug designation for lixivaptan for ADPKD in the United States and we may in the future seek orphan drug designation for certain of our other product candidates, but we may be unable to maintain orphan drug designation or obtain any benefits associated with orphan drug designation, including market exclusivity. Regulatory authorities in some jurisdictions, including the United States and the European Union, may designate drugs and biologics intended to treat relatively small patient populations as orphan drugs. Under the Orphan Drug Act of 1983, FDA may designate a product candidate as an orphan drug if it is intended to treat a rare disease or condition, which is defined as a disease or condition having a patient population of fewer than 200,000 individuals in the United States, or a patient population greater than 200,000 in the United States where there is no reasonable expectation that the cost of developing the drug will be recovered from sales in the United States. In the European Union, the European Commission after recommendation from the EMA's Committee for Orphan Medicinal Products grants orphan designation to promote the development of products that are intended for the diagnosis, prevention or treatment of a life-threatening or chronically debilitating condition which either affects not more than 5 in 10,000 persons in the European Union, or products intended for the diagnosis, prevention or treatment of a life-threatening, seriously debilitating or serious and chronic condition when, without incentives, it is unlikely that sales of the product in the European Union would be sufficient to justify the necessary investment in developing the product. In each case, there must be no satisfactory method of diagnosis, prevention, or treatment which is authorized for marketing in the EU, or, if a method exists, the product would be of significant benefit to those affected by the condition.

Certain of our current product candidates, and our future potential product candidates may target patient populations that are smaller than the numbers described above. If we request orphan drug designation for our product candidates, there can be no assurances that FDA or the European Commission will grant any of our product candidates

such designation. Additionally, the designation of any of our product candidates as an orphan product does not guarantee that any regulatory agency will accelerate regulatory review of, or ultimately approve, that product candidate, nor does it limit the ability of any regulatory agency to grant orphan drug designation to product candidates of other companies that treat the same indications as our product candidates prior to our product candidates receiving exclusive marketing approval.

Generally, if a product candidate with an orphan drug designation receives the first marketing approval for the indication for which it has such designation, the product is entitled to a period of marketing exclusivity, which precludes the FDA or the European Commission from approving another marketing application for a product that constitutes the same drug treating the same indication for that marketing exclusivity period, except in limited circumstances. If another sponsor receives such approval before we do (regardless of our orphan drug designation), we will be precluded from receiving marketing approval for our product for the applicable exclusivity period. The applicable period is seven years in the United States and 10 years in the European Union. The exclusivity period in the United States can be extended by six months if the sponsor submits pediatric data that fairly respond to a written request from the FDA for such data. The exclusivity period in the European Union can be reduced to six years if a product no longer meets the criteria for orphan drug designation or if the product is sufficiently profitable so that market exclusivity is no longer justified. Orphan drug exclusivity may be revoked if any regulatory agency determines that the request for designation was materially defective or if the manufacturer is unable to assure sufficient quantity of the product to meet the needs of patients with the rare disease or condition.

Even if we obtain orphan drug exclusivity for a product candidate, that exclusivity may not effectively protect the product candidate from competition because different drugs can be approved for the same condition. In the United States, even after an orphan drug is approved, the FDA may subsequently approve another drug for the same condition if the FDA concludes that the latter drug is not the same drug or is clinically superior in that it is shown to be safer, more effective or makes a major contribution to patient care. In the European Union, marketing authorization may be granted to a similar medicinal product for the same orphan indication if:

- the second applicant can establish in its application that its medicinal product, although similar to the orphan medicinal product already authorized, is safer, more effective or otherwise clinically superior;
- the holder of the marketing authorization for the original orphan medicinal product consents to a second orphan medicinal product application; or
- the holder of the marketing authorization for the original orphan medicinal product cannot supply sufficient quantities of orphan medicinal product.

We face significant competition in an environment of rapid technological change and the possibility that our competitors may achieve regulatory approval before us or develop therapies that are more advanced or effective than ours, which may adversely affect our ability to successfully market or commercialize our product candidates and our financial condition.

The biotechnology and pharmaceutical industries are characterized by rapidly changing technologies, significant competition and a strong emphasis on intellectual property. We face substantial competition from many different sources, including large and specialty pharmaceutical and biotechnology companies, academic research institutions, government agencies and public and private research institutions. In addition, we face competition from other companies that have adopted business models that are similar to ours in which they establish strategic alliances, create joint ventures or collaborations, or enter into licensing arrangements with third parties for programs, product candidates, technologies or intellectual property. We may not be able to compete effectively with such companies. See "—We may not be successful in our efforts to use our differentiated asset-centric business model to build a pipeline of product candidates with commercial value."

For example, for our clinical-stage product candidates, our main competitors include:

- For lixivaptan, tolvaptan for the treatment of ADPKD, along with bardoxolone, which is currently undergoing a Phase 3 trial.
- For SerpinPC, approved treatments such as emicizumab that are factor replacement therapies. Alternative approaches are in development to reduce the efficiency of natural anticoagulant mechanisms. In addition to these approaches, gene therapies for HA and HB are being developed by various sponsors.
- For imgatuzumab, anti-PD1 immune checkpoint inhibitors such as cemiplimab and pembrolizumab. Cetuximab is also used off-label for advanced CSCC patients who are ineligible for anti-PD1 therapy or who

relapse after treatment. Beyond immune checkpoint inhibitors, cisplatin-based combinations have demonstrated modest activity but with significant toxicity.

- For ZF874, several product candidates in clinical development such as next generation augmentation therapies like INBRX-101 being developed by Inhibrx, ARO-AAT being developed by Arrowhead and belcesiran being developed by Novo Nordisk (Dicerna) for AATD. In addition, BioMarin and Vertex each have preclinical AATD development programs.

Many of our potential competitors, alone or with their strategic partners, may have substantially greater financial, technical and other resources, such as larger research and development, clinical, marketing and manufacturing organizations. Mergers and acquisitions in the biotechnology and pharmaceutical industries may result in even more resources being concentrated among a smaller number of competitors. Our commercial opportunity could be reduced or eliminated if competitors develop and commercialize products that are safer, more effective, have fewer or less severe side effects, are more convenient or are less expensive than any products that we may develop. Competitors also may obtain FDA or other regulatory approval for their products more rapidly or earlier than we may obtain approval for ours, which could result in our product being prevented from being marketed for significant periods (for example, where our competitor has secured regulatory exclusivity) or our competitors establishing a strong market position before we are able to enter the market. Additionally, technologies developed by our competitors may render our potential product candidates uneconomical or obsolete, and we may not be successful in marketing our product candidates against competitors.

In addition, as a result of the expiration or successful challenge of our patent rights, we could face more litigation with respect to the validity and/or scope of patents relating to our competitors' products. The availability of our competitors' products could limit the demand, and the price we are able to charge, for any products that we may develop and commercialize.

Our product candidates and the process for administering our product candidates may cause undesirable side effects or have other properties that could delay or prevent their regulatory approval, limit the commercial potential or result in significant negative consequences following any potential marketing approval.

Our product candidates may cause undesirable side effects. Additionally, the administration process or related procedures also can cause adverse side effects. Adverse events that occur in our trials may cause us, or cause regulatory authorities or others to order us to halt, delay or amend preclinical development or clinical development of our product candidates and could result in more restrictive labeling or the denial of regulatory approval of our product candidates for any or all targeted indications. Even if serious adverse events are unrelated to study treatment, such occurrences could affect patient enrollment or the ability of enrolled patients to complete the trial. In addition, if any of our product candidates are tested or used in combination with other drugs, these combinations may have additional side effects, which could be more severe than those caused by either therapy alone.

Additionally, certain of our product candidates could cause undesirable side effects in clinical trials related to on-target toxicity. If on-target toxicity is observed, or if our product candidates have characteristics that are unexpected, we may need to abandon their development or limit development to more narrow uses or subpopulations in which the undesirable side effects or other characteristics are less prevalent, less severe or more acceptable from a risk-benefit perspective. Many compounds that initially showed promise in early stage testing for treating cancer have later been found to cause side effects that prevented further development of the compound.

Furthermore, clinical trials by their nature utilize a sample of the potential patient population. With a limited number of patients and limited duration of exposure, rare and severe side effects of our product candidates or those of our competitors may only be uncovered when a significantly larger number of patients have been exposed to the drug. While we believe that our product candidates have demonstrated manageable tolerability profiles thus far in the target indications, there can be no assurance that it or any of our other product candidates will not cause more severe side effects in a greater proportion of patients. In addition, some of our product candidates are intended to address limitations in current treatment approaches by offering potentially greater tolerability. If we do not observe a favorable tolerability profile in testing of such product candidates that differentiate them from competitors in the market, we may decide to suspend or terminate development of such candidates.

In addition, certain of our product candidates target diseases that are life-threatening or are associated with significant co-morbidities. For example, some of our product candidates are designed to address cancers, an indication in which patients may undergo treatment with other therapies such as chemotherapy, radiation, and/or other high dose or myeloablative treatments in the course of treatment of their disease, and may therefore experience side effects or AEs,

including death, that are unrelated to our product candidates. While these side effects or AEs may be unrelated to our product candidates, they may still affect the success of our clinical trials. The inclusion of critically ill patients in our clinical trials may also result in deaths or other adverse medical events due to underlying disease or to other therapies or medications that such patients may receive.

Additionally, if any of our product candidates receives marketing approval, FDA could require us to adopt REMS, to ensure that the benefits outweigh its risks, which may include, among other things, a medication guide outlining the risks of the product for distribution to patients and a communication plan to health care practitioners. Furthermore, if we or others later identify undesirable side effects caused by our product candidate, several potentially significant negative consequences could result, including:

- regulatory authorities may suspend or withdraw approvals of such product candidate;
- regulatory authorities may require additional warnings on the label;
- we may be required to change the way a product candidate is administered or conduct additional clinical trials;
- we could be sued and held liable for harm caused to patients; and
- our reputation may suffer.

Any of these events could prevent us from achieving or maintaining market acceptance of our product candidates and could significantly harm our business, prospects, financial condition and results of operations.

We may not be able to submit INDs or IND amendments to commence additional clinical trials on the timelines we expect, and even if we are able to, the FDA may not permit us to proceed.

Currently, most of the product candidates in our pipeline have not yet commenced clinical trials, and are in preclinical development and IND-enabling activities. We may not be able to submit INDs for our product candidates on the timelines we expect. For example, we may experience manufacturing delays or other delays with IND-enabling studies. Moreover, we cannot be sure that submission of an IND will result in the FDA allowing further clinical trials to begin, or that, once begun, issues will not arise that suspend or terminate clinical trials. Additionally, even if such regulatory authorities agree with the design and implementation of the clinical trials set forth in an IND, we cannot guarantee that such regulatory authorities will not change their requirements in the future. These considerations also apply to new clinical trials we may submit as amendments to existing INDs or to a new IND. Any failure to file INDs on the timelines we expect or to obtain regulatory approvals for our trials may prevent us from completing our clinical trials or commercializing our products on a timely basis, if at all.

We are currently conducting and plan to conduct future clinical trials for certain product candidates outside the United States, and the FDA and comparable foreign regulatory authorities may not accept data from such trials.

We are currently conducting and plan to conduct future clinical trials for certain product candidates outside the United States, including in Europe. The acceptance of study data from clinical trials conducted outside the United States or another jurisdiction by the FDA or comparable foreign regulatory authority may be subject to certain conditions or may not be accepted at all. In cases where data from foreign clinical trials are intended to serve as the basis for marketing approval in the United States, the FDA will generally not approve the application on the basis of foreign data alone unless (i) the data are applicable to the U.S. population and U.S. medical practice; and (ii) the trials were performed by clinical investigators of recognized competence and pursuant to GCP regulations. Additionally, the FDA's clinical trial requirements, including sufficient size of patient populations and statistical powering, must be met. Many foreign regulatory authorities have similar approval requirements. In addition, such foreign trials would be subject to the applicable local laws of the foreign jurisdictions where the trials are conducted. There can be no assurance that the FDA or any comparable foreign regulatory authority will accept data from trials conducted outside of the United States or the applicable jurisdiction. If the FDA or any comparable foreign regulatory authority does not accept such data, it would result in the need for additional trials, which could be costly and time-consuming, and which may result in product candidates that we may develop not receiving approval for commercialization in the applicable jurisdiction.

Even if we obtain and maintain approval for our product candidates from the FDA, we may never obtain approval for our product candidates outside of the United States, which would limit our market opportunities and adversely affect our business.

Approval of a product candidate in the United States by the FDA does not ensure approval of such product candidate by regulatory authorities in other countries or jurisdictions, and approval by one foreign regulatory authority does not ensure approval by regulatory authorities in other foreign countries or by the FDA. Sales of our product candidates outside of the United States will be subject to foreign regulatory requirements governing clinical trials and marketing approval. Even if the FDA grants marketing approval for a product candidate, comparable regulatory authorities of foreign countries also must approve the manufacturing and marketing of the product candidates in those countries. Approval procedures vary among jurisdictions and can involve requirements and administrative review periods different from, and more onerous than, those in the United States, including additional preclinical studies or clinical trials. In many countries outside the United States, a product candidate must be approved for reimbursement before it can be approved for sale in that country. In some cases, the price that we intend to charge for our products, if approved, is also subject to approval. We intend to submit a marketing authorization application to the EMA for approval of our product candidates in the European Union, but obtaining such approval from the European Commission following the opinion of the EMA is a lengthy and expensive process. We may also submit marketing applications to regulators in other jurisdictions, such as to the MHRA in the United Kingdom. Even if a product candidate is approved, the FDA, the European Commission, the MHRA and other foreign regulatory authorities, as the case may be, may limit the indications for which the product may be marketed, require extensive warnings on the product labeling or require expensive and time-consuming additional clinical trials or reporting as conditions of approval. Regulatory authorities in countries outside of the United States and the European Union also have requirements for approval of product candidates with which we must comply prior to marketing in those countries. Obtaining foreign regulatory approvals and compliance with foreign regulatory requirements could result in significant delays, difficulties and costs for us and could delay or prevent the introduction of our product candidates in certain countries.

Further, clinical trials conducted in one country may not be accepted by regulatory authorities in other countries. Also, regulatory approval for any of our product candidates may be withdrawn. If we fail to comply with the regulatory requirements, our target market will be reduced and our ability to realize the full market potential of our product candidates will be harmed and our business, financial condition, results of operations and prospects will be adversely affected.

A Fast Track designation by the FDA, even if granted, may not lead to a faster development or regulatory review or approval process, and does not increase the likelihood that our product candidates will receive marketing approval.

If a drug or biologic is intended for the treatment of a serious or life-threatening condition and the product demonstrates the potential to address unmet medical needs for this condition, the product sponsor may apply for FDA Fast Track designation for a particular indication. We may seek Fast Track designation for certain of our current and future product candidates, but there is no assurance that the FDA will grant this status to any of our proposed product candidates. The FDA has broad discretion whether or not to grant Fast Track designation, so even if we believe a particular product candidate is eligible for this designation, there can be no assurance that the FDA would decide to grant it. Even if we do receive Fast Track designation, we may not experience a faster development process, review or approval compared to conventional FDA procedures, and receiving a Fast Track designation does not provide assurance of ultimate FDA approval. In addition, the FDA may withdraw Fast Track designation if it believes that the designation is no longer supported by data from our clinical development program. In addition, the FDA may withdraw any Fast Track designation at any time.

Even if we receive regulatory approval of one or more of our product candidates, we would be subject to ongoing regulatory obligations and continued regulatory review, which may result in significant additional expense and we may be subject to penalties if we fail to comply with regulatory requirements or experience unanticipated problems with our product candidates.

Any regulatory approvals that we receive for our product candidates will require surveillance to monitor the safety and efficacy of the product candidate. The FDA may also require a REMS in order to approve our product candidates, which could entail requirements for a medication guide, physician communication plans or additional elements to ensure safe use, such as restricted distribution methods, patient registries and other risk minimization tools. In addition, if the FDA or a comparable foreign regulatory authority approves our product candidates, the manufacturing processes, labeling, packaging, distribution, adverse event reporting, storage, advertising, promotion, import, export and recordkeeping for our product candidates will be subject to extensive and ongoing regulatory requirements. These requirements include submissions of safety and other post-marketing information and reports, registration, as well as continued compliance with

cGMPs, good laboratory practice ("GLP") regulations and GCPs, for any clinical trials that we conduct post-approval. In addition, manufacturers are required to comply with applicable product tracking and tracing requirements. Later discovery of previously unknown problems with our product candidates, including adverse events of unanticipated severity or frequency, or with our third-party manufacturers or manufacturing processes, or failure to comply with regulatory requirements, may result in, among other things:

- restrictions on the marketing or manufacturing of our product candidates, withdrawal of the product from the market or voluntary or mandatory product recalls;
- manufacturing delays and supply disruptions where regulatory inspections identify observations of noncompliance requiring remediation;
- revisions to the labeling, including limitation on approved uses or the addition of additional warnings, contraindications or other safety information, including boxed warnings;
- imposition of a REMS, which may include distribution or use restrictions;
- requirements to conduct additional post-market clinical trials to assess the safety of the product;
- fines, warning letters or holds on clinical trials;
- refusal by the FDA to approve pending applications or supplements to approved applications filed by us or suspension or revocation of approvals;
- product seizure or detention, or refusal to permit the import or export of our product candidates; and
- injunctions or the imposition of civil or criminal penalties.

The FDA's and other regulatory authorities' policies may change and additional government regulations may be enacted that could prevent, limit or delay regulatory approval of our product candidates. We cannot predict the likelihood, nature or extent of government regulation that may arise from future legislation or administrative action, either in the United States or abroad. If we are slow or unable to adapt to changes in existing requirements or the adoption of new requirements or policies, or if we are not able to maintain regulatory compliance, we may lose any marketing approval that we may have obtained and we may not achieve or sustain profitability.

The market opportunities for our oncology product candidates may be relatively small since the patients who may potentially be treated with our oncology product candidates are those who are ineligible for or have failed prior treatments, and our estimates of the prevalence of our target patient populations may be inaccurate.

Cancer therapies are sometimes characterized by line of therapy (first line, second line, third line, fourth line, etc.), and the FDA often approves new therapies initially only for a particular line or lines of use. When cancer is detected early enough, first line therapy is sometimes adequate to cure the cancer or prolong life without a cure. Whenever first line therapy, usually chemotherapy, antibody drugs, tumor-targeted small molecules, hormone therapy, radiation therapy, surgery, or a combination of these, proves unsuccessful, second line therapy may be administered. Second line therapies often consist of more chemotherapy, radiation, antibody drugs, tumor-targeted small molecules, or a combination of these. Third line therapies can include chemotherapy, antibody drugs and small molecule tumor-targeted therapies, more invasive forms of surgery, and new technologies. There is no guarantee that our product candidates, even if approved as a second or third or subsequent line of therapy, would be approved for an earlier line of therapy, and, prior to any such approvals, we may have to conduct additional clinical trials.

Our projections of both the number of people who have the cancers we are targeting, who may have their tumors genetically sequenced, as well as the subset of people with these cancers in a position to receive a particular line of therapy and who have the potential to benefit from treatment with our product candidates, are based on our beliefs and estimates. These estimates have been derived from a variety of sources, including scientific literature, surveys of clinics, patient foundations or market research, and may prove to be incorrect. Further, new therapies may change the estimated incidence or prevalence of the cancers that we are targeting. Consequently, even if our product candidates are approved for a second or third line of therapy, the number of patients that may be eligible for treatment with our product candidates may turn out to be much lower than expected. In addition, we have not yet conducted market research to determine how treating physicians would expect to prescribe a product that is approved for multiple tumor types if there are different lines of approved therapies for each such tumor type.

If we decide in the future to develop our product candidates in combination with other therapies, such strategy may expose us to additional risks.

We may in the future develop one or more of our product candidates in combination with one or more approved or unapproved therapies. Even if any product candidate we develop were to receive marketing approval for use in combination with other approved therapies, the FDA, the EMA, the MHRA or comparable foreign regulatory authorities outside of the United States could still revoke approval of the therapy used in combination with our product. If the therapies used in combination with our product candidates are replaced as the standard of care for the indications we choose for any of our product candidates, the FDA, the EMA, the MHRA or comparable foreign regulatory authorities may require us to conduct additional clinical trials. The occurrence of any of these risks could result in our own products, if approved, being removed from the market or being less successful commercially.

Further, we will not be able to market and sell any product candidate we develop in combination with an unapproved cancer therapy for a combination indication if that unapproved therapy does not ultimately obtain marketing approval either alone or in combination with our product. In addition, unapproved cancer therapies face the same risks described with respect to our product candidates currently in development and clinical trials, including the potential for serious adverse effects, delay in their clinical trials and lack of FDA approval.

If the FDA, EMA, MHRA or comparable foreign regulatory authorities do not approve these other products or revoke their approval of, or if safety, efficacy, quality, manufacturing or supply issues arise with, the products we choose to evaluate in combination with our product candidate we develop, we may be unable to obtain approval of or market such combination therapy.

Certain of our product candidates are expected to be used with a drug delivery system and thus may be regulated as a combination product and may face additional challenges, risks and delays in the product development and regulatory approval process.

Our intranasal OX2R agonist program is expected to be used with an intranasal delivery system. We currently have an exclusive license in respect of the OptiNose Bi-Directional Exhalation Delivery System. When evaluating product candidates that utilize a specific drug delivery system or device, the FDA will evaluate the characteristics of that delivery system and its functionality, as well as the potential for undesirable interactions between the drug and the delivery system, including the potential to negatively impact the safety or effectiveness of the drug. The intranasal OX2R agonist program is in preclinical development and use of the OptiNose Bi-Directional Exhalation Delivery System with OX2R may be unsuccessful in clinical trials and we may have to identify another delivery device or develop our own. The FDA review process can be more complicated for combination products, and may result in delays, particularly if novel delivery systems are involved. Additionally, quality or design concerns with the delivery system could delay or prevent regulatory approval and commercialization of intranasal OX2R.

Risks Related to our Reliance on Third Parties

We rely, and expect to continue to rely, on third parties to conduct our preclinical studies and clinical trials and if these third parties perform in an unsatisfactory manner, our business could be substantially harmed.

We currently conduct and expect to continue to rely on third parties such as CROs to conduct our clinical trials. However, we do not currently have the ability to independently conduct large-scale clinical trials, such as a Phase 3 clinical trial, without assistance of third parties.

We have relied upon and plan to continue to rely upon medical institutions, clinical investigators, contract laboratories and other third parties, such as CROs, to conduct or assist us in conducting GCP-compliant clinical trials on our product candidates properly and on time, and may not currently have all of the necessary contractual relationships in place to do so. Once we have established contractual relationships with such third-party CROs, we will have only limited control over their actual performance of these activities.

We and our CROs and other vendors are required to comply with cGMP, GCP and GLP which are regulations and guidelines enforced by the FDA, the Competent Authorities of the Member States of the European Union and any comparable foreign regulatory authorities for all of our product candidates in preclinical and clinical development. Regulatory authorities enforce these regulations through periodic inspections of trial sponsors, principal investigators, clinical trial sites and other contractors. Although we rely on CROs to conduct any current or planned GLP-compliant preclinical studies and GCP-compliant clinical trials and have limited influence over their actual performance,

we remain responsible for ensuring that each of our preclinical studies and clinical trials is conducted in accordance with its investigational plan and protocol and applicable laws and regulations, and our reliance on the CROs does not relieve us of our regulatory responsibilities. If we or any of our CROs or vendors fail to comply with applicable regulations, the data generated in our preclinical studies and clinical trials may be deemed unreliable and the FDA, EMA, MHRA or any comparable foreign regulatory agency may require us to perform additional preclinical studies and clinical trials before approving our marketing applications. We cannot assure you that upon inspection by a given regulatory agency, such regulatory agency will determine that all of our clinical trials comply with GCP regulations. In addition, our clinical trials must be conducted with products produced under cGMP requirements. Our failure to comply with these requirements may require us to repeat clinical trials, which would delay the regulatory approval process.

While we will have agreements governing their activities, our CROs will not be our employees, and we will not be able to control whether or not they devote sufficient time and resources to our future preclinical and clinical programs. These CROs may also have relationships with other commercial entities, including our competitors, for whom they may also be conducting clinical trials, or other drug development activities which could harm our business. We face the risk of potential unauthorized disclosure or misappropriation of our intellectual property by CROs, which may reduce our trade secret protection and allow our potential competitors to access and exploit our proprietary technology. CROs also may use our proprietary information and intellectual property in such a way as to result in litigation or other intellectual property-related proceedings that could jeopardize or invalidate our proprietary information and intellectual property. If our CROs do not successfully carry out their contractual duties or obligations, fail to meet expected deadlines, or if the quality or accuracy of the clinical data they obtain is compromised due to the failure to adhere to our clinical protocols or regulatory requirements or for any other reason, our clinical trials may be extended, delayed or terminated, the clinical data generated in our clinical trials may be deemed unreliable, and we may not be able to obtain regulatory approval for, or successfully commercialize any product candidate that we develop. As a result, our financial results and the commercial prospects for any product candidate that we develop would be harmed, our costs could increase, and our ability to generate revenue could be delayed.

If our relationships with these CROs terminate, we may not be able to enter into arrangements with alternative CROs or do so on commercially reasonable terms. Switching or adding additional CROs involves substantial cost and requires management time and focus, and could delay development and commercialization of our product candidates. In addition, there is a natural transition period when a new CRO commences work. As a result, delays occur, which can negatively impact our ability to meet our desired clinical development timelines. Though we intend to carefully manage our relationships with our CROs, there can be no assurance that we will not encounter challenges or delays in the future or that these delays or challenges will not have a negative impact on our business and financial condition.

We could experience manufacturing problems that result in delays in our development or commercialization of our programs or otherwise harm our business.

The manufacturing processes our CMOs use to produce our and our affiliates' product candidates are complex. Several factors could cause production interruptions, including inability to develop novel manufacturing processes, equipment malfunctions, facility contamination, raw material shortages or contamination, natural disasters, disruption in utility services, human error or disruptions in the operations of our suppliers, including acquisition of the supplier by a third party or declaration of bankruptcy. The expertise required to manufacture these product candidates may be unique to a particular CMO, and as a result, it would be difficult and time consuming to find an alternative CMO.

Some of our product candidates include biologics, some of which have physical and chemical properties that cannot be fully characterized. As a result, assays of the finished product may not be sufficient to ensure that the product is consistent from lot-to-lot or will perform in the intended manner. Accordingly, our CMOs must employ multiple steps to control the manufacturing process to assure that the process is reproducible and the product candidate is made strictly and consistently in compliance with the process. Problems with the manufacturing process, even minor deviations from the normal process, could result in product defects or manufacturing failures that result in lot failures, product recalls, product liability claims or insufficient inventory to conduct clinical trials or supply commercial markets. We may encounter problems achieving adequate quantities and quality of clinical-grade materials that meet the FDA, the EMA, the MHRA or other applicable standards or specifications with consistent and acceptable production yields and costs.

In addition, the FDA, the EMA, the MHRA and other foreign regulatory authorities may require us to submit samples of any lot of any approved product together with the protocols showing the results of applicable tests at any time. Under some circumstances, the FDA, the EMA, the MHRA or other foreign regulatory authorities may require that we not distribute a lot until the agency authorizes its release. Slight deviations in the manufacturing process, including those

affecting quality attributes and stability, may result in unacceptable changes in the product that could result in lot failures or product recalls. Lot failures or product recalls could cause us to delay product launches or clinical trials, which could be costly to us and otherwise harm our business, financial condition, results of operations and prospects.

Our CMOs also may encounter problems hiring and retaining the experienced scientific, quality assurance, quality-control and manufacturing personnel needed to operate our manufacturing processes, which could result in delays in production or difficulties in maintaining compliance with applicable regulatory requirements.

Any problems in our CMOs' supply chain, manufacturing process or facilities could result in delays in planned clinical trials and increased costs, and could make us a less attractive collaborator for potential partners, including larger biotechnology companies and academic research institutions, which could limit access to additional attractive development programs. Problems in our manufacturing process could restrict our ability to meet potential future market demand for products.

We currently rely and expect to rely in the future on the use of third parties to manufacture our product candidates. Our business could be harmed if the third party manufacturers experience supply chain shortages, fail to provide us with sufficient quantities of our product candidates or fail to do so at acceptable quality levels or prices or deliver defective products.

We do not currently own any facility that may be used as our clinical-scale manufacturing and processing facility and must currently rely on outside vendors to manufacture our product candidates. We will need to negotiate and maintain contractual arrangements with these outside vendors for the supply of our product candidates and we may not be able to do so on favorable terms. We have not yet caused our product candidates to be manufactured on a commercial scale and may not be able to do so for any of our product candidates.

Our anticipated reliance on a limited number of third-party manufacturers exposes us to a number of risks, including the following:

- we may be unable to identify manufacturers on acceptable terms or at all because the number of potential manufacturers is limited and the FDA must inspect any manufacturers for current cGMP compliance as part of our marketing application;
- a new manufacturer would have to be educated in, or develop substantially equivalent processes for, the production of our product candidates;
- a change in manufacturers or certain changes in manufacturing processes/procedures will require that we conduct a manufacturing comparability study to verify that any new manufacturer or manufacturing process/ procedures will produce our product candidate according to the specifications previously submitted to the FDA or other regulatory authority, and such study may be unsuccessful;
- our third-party manufacturers might be unable to timely manufacture our product candidates or produce the quantity and quality required to meet our clinical and commercial needs, if any;
- contract manufacturers may not be able to execute our manufacturing procedures and other logistical support requirements appropriately;
- our future contract manufacturers may not perform as agreed, may not devote sufficient resources to our product candidates or may not remain in the contract manufacturing business for the time required to supply our clinical trials or to successfully produce, store, and distribute our products, if any;
- manufacturers are subject to ongoing periodic unannounced inspection by the FDA and corresponding state agencies to ensure strict compliance with cGMP and other government regulations and corresponding foreign standards and we have no control over third-party manufacturers' compliance with these regulations and standards;
- we may not own, or may have to share, the intellectual property rights to any improvements made by our third-party manufacturers in the manufacturing process for our product candidates;
- our third-party manufacturers could breach or terminate their agreements with us;
- raw materials and components used in the manufacturing process, particularly those for which we have no other source or supplier, may not be available or may not be suitable or acceptable for use due to material or component defects;

- our contract manufacturers and critical reagent suppliers may be subject to inclement weather, as well as natural or man-made disasters; and
- our contract manufacturers may have unacceptable or inconsistent product quality success rates and yields, and we have no direct control over our contract manufacturers' ability to maintain adequate quality control, quality assurance and qualified personnel.

Each of these risks could delay or prevent the completion of our clinical trials or the approval of any of our product candidates by the FDA, result in higher costs or adversely impact commercialization of our product candidates. In addition, we will rely on third parties to perform certain specification tests on our product candidates prior to delivery to patients. If these tests are not appropriately done and test data are not reliable, patients could be put at risk of serious harm and the FDA could place significant restrictions on our company until deficiencies are remedied. Moreover, because each of our Centessa Subsidiaries has a separate manufacturing process for their programs, we will not benefit from any synergies related to manufacturing costs. We may also face logistical problems in managing different CMOs and processes for all of our Centessa Subsidiaries.

Certain third parties upon whom we rely for the supply of the active pharmaceutical ingredient used in our product candidates are our sole source of supply, and the loss of any of these suppliers could significantly harm our business.

Certain of the third parties upon whom we rely for the supply of the active pharmaceutical ingredient used in our product candidates are our sole source of supply, and the loss of any of these suppliers could significantly harm our business. The active pharmaceutical ingredients ("API") used in certain of our product candidates are supplied to us from single-source suppliers. Our ability to successfully develop our product candidates, and to ultimately supply our commercial products in quantities sufficient to meet the market demand, depends in part on our ability to obtain the API for these products in accordance with regulatory requirements and in sufficient quantities for clinical testing and commercialization. We do not currently have arrangements in place for a redundant or second-source supply of any such API in the event any of our current suppliers of such API cease their operations for any reason. We are also unable to predict how changing global economic conditions or potential global health concerns such as the COVID-19 pandemic will affect our third-party suppliers and manufacturers. Any negative impact of such matters on our third-party suppliers and manufacturers may also have an adverse impact on our results of operations or financial condition. For all of our product candidates, we intend to identify and qualify additional manufacturers to provide such API prior to submission of an NDA or BLA (as applicable) to the FDA and/or EMA, MHRA or other applicable regulatory bodies. We are not certain, however, that our single-source suppliers will be able to meet our demand for their products, either because of the nature of our agreements with those suppliers, our limited experience with those suppliers or our relative importance as a customer to those suppliers. It may be difficult for us to assess their ability to timely meet our demand in the future based on past performance. While our suppliers have generally met our demand for their products on a timely basis in the past, they may subordinate our needs in the future to their other customers. Establishing additional or replacement suppliers for the API used in our product candidates, if required, may not be accomplished quickly. If we are able to find a replacement supplier, such replacement supplier would need to be qualified and may require additional regulatory inspection or approval, which could result in further delay. While we seek to maintain adequate inventory of the API used in our product candidates, any interruption or delay in the supply of components or materials, or our inability to obtain such API from alternate sources at acceptable prices in a timely manner could impede, delay, limit or prevent our development efforts, which could harm our business, results of operations, financial condition and prospects.

If our third-party manufacturers use hazardous and biological materials in a manner that causes injury or violates applicable law, we may be liable for damages.

Our research and development activities involve the controlled use of potentially hazardous substances, including chemical and biological materials, by our third-party manufacturers. Our manufacturers are subject to federal, state and local laws and regulations in the United States governing the use, manufacture, storage, handling and disposal of medical and hazardous materials. Although we believe that our manufacturers' procedures for using, handling, storing and disposing of these materials comply with legally prescribed standards, we cannot completely eliminate the risk of contamination or injury resulting from medical or hazardous materials. As a result of any such contamination or injury, we may incur liability or local, city, state or federal authorities may curtail the use of these materials and interrupt our business operations. In the event of an accident, we could be held liable for damages or penalized with fines, and the liability could exceed our resources. We do not have any insurance for liabilities arising from medical or hazardous materials. Compliance with applicable environmental laws and regulations is expensive, and current or future environmental regulations may impair our research, development and production efforts, which could harm our business, prospects, financial condition or results of operations.

If we are unable to obtain licenses from third parties on commercially reasonable terms or fail to comply with our obligations under such agreements, our business could be harmed.

It may be necessary for us to use the patented or proprietary technology of third parties to commercialize our products, in which case we would be required to obtain a license from these third parties. If we are unable to license such technology, or if we are forced to license such technology, on unfavorable terms, our business could be materially harmed. If we are unable to obtain a necessary license, we may be unable to develop or commercialize the affected product candidates, which could materially harm our business, and the third parties owning such intellectual property rights could seek either an injunction prohibiting our sales, or, with respect to our sales, an obligation on our part to pay royalties and/or other forms of compensation. Even if we are able to obtain a license, it may be non-exclusive, thereby giving our competitors access to the same technologies licensed to us.

If we fail to comply with our obligations under our license agreements, our counterparties may have the right to terminate these agreements, in which event we might not be able to develop, manufacture or market, or may be forced to cease developing, manufacturing or marketing, any product that is covered by these agreements or may face other penalties under such agreements. Such an occurrence could materially adversely affect the value of the product candidate being developed under any such agreement. Termination of these agreements or reduction or elimination of our rights under these agreements may result in our having to negotiate new or reinstated agreements with less favorable terms, cause us to lose our rights under these agreements, including our rights to important intellectual property or technology, or impede, delay or prohibit the further development or commercialization of one or more product candidates that rely on such agreements.

We or the third parties upon whom we depend may be adversely affected by earthquakes, outbreak of disease, or other natural disasters and our business continuity and disaster recovery plans may not adequately protect us from a serious disaster.

Earthquakes, outbreak of disease, or other natural disasters could severely disrupt our operations, and have a material adverse effect on our business, results of operations, financial condition and prospects. If a natural disaster, power outage or other event occurred that prevented us from using all or a significant portion of our headquarters, that damaged critical infrastructure, such as the manufacturing facilities of our third-party CMOs, or that otherwise disrupted operations, it may be difficult or, in certain cases, impossible for us to continue our business for a substantial period of time. For example, in December 2019, an outbreak of a novel strain of coronavirus originated in Wuhan, China. See "—Business interruptions resulting from the COVID-19 outbreak or similar public health crises could cause a disruption of the development of our product candidates and adversely impact our business." In addition, since the beginning of the COVID-19 pandemic, three vaccines for the coronavirus have been granted Emergency Use Authorization by the FDA, and two of those later received marketing approval. Additional vaccines may be authorized or approved in the future. The resultant demand for vaccines and potential for manufacturing facilities and materials to be commandeered under the Defense Production Act of 1950, or equivalent foreign legislation, may make it more difficult to obtain materials or manufacturing slots for the products needed for our clinical trials, which could lead to delays in these trials. The disaster recovery and business continuity plans we have in place currently are limited and are unlikely to prove adequate in the event of a serious disaster or similar event. We may incur substantial expenses as a result of the limited nature of our disaster recovery and business continuity plans, which, particularly when taken together with our lack of earthquake insurance, could have a material adverse effect on our business.

Risks Related to Our Intellectual Property

If we are unable to obtain and maintain sufficient patent and other intellectual property protection for our product candidates and technology or other product candidates that may be identified, or if the scope of the intellectual property protection obtained is not sufficiently broad, our competitors could develop and commercialize product candidates similar or identical to the product candidates, and our ability to successfully commercialize the product candidates and other product candidates that we may pursue may be impaired.

As is the case with other pharmaceutical and biopharmaceutical companies, our success depends in significant part on our ability and the ability of our licensors and collaborators to obtain, maintain, enforce and defend patents and other intellectual property rights with respect to our product candidates and technology and to operate our business without infringing, misappropriating, or otherwise violating the intellectual property rights of others. We have and expect to continue to maintain and expand our own patent estate.

We have also licensed patent and other intellectual property rights to and from our partners. Some of these licenses give us the right to prepare, file and prosecute patent applications and maintain and enforce patents we have

licensed, whereas other licenses may not give us such rights. In some circumstances, we may not have the right to control the preparation, filing and prosecution of patent applications or to maintain the patents covering technology that we license to or from our partners, and we may have to rely on our partners to fulfill these responsibilities. Consequently, these patents and applications may not be prosecuted and enforced in a manner consistent with the best interests of our business. If our current or future licensors, licensees or collaborators fail to establish, maintain or protect such patents and other intellectual property rights, such rights may be reduced or eliminated. If our licensors, licensees or collaborators are not fully cooperative or disagree with us as to the prosecution, maintenance or enforcement of any patent rights, such patent rights could be compromised.

The patent prosecution process is expensive and time-consuming. We and our current or future licensors, licensees or collaborators may not be able to prepare, file and prosecute all necessary or desirable patent applications at a reasonable cost or in a timely manner. It is also possible that we or our licensors will fail to file patent applications covering inventions made in the course of development and commercialization activities before a competitor or another third party files a patent application covering, or publishes information disclosing, a similar, independently-developed invention. Such competitor's patent application may pose obstacles to our ability to obtain or limit the scope of patent protection we may obtain. Although we enter into non-disclosure and confidentiality agreements with parties who have access to confidential or patentable aspects of our research and development output, such as our employees, collaborators, CROs, contract manufacturers, consultants, advisors and other third parties, any of these parties may breach the agreements and disclose such output before a patent application is filed, thereby jeopardizing our ability to seek patent protection. In addition, publications of discoveries in the scientific literature often lag behind the actual discoveries, and patent applications in the United States and other jurisdictions are typically not published until 18 months after filing, or in some cases not at all. Therefore, we cannot be certain that we or our licensors were the first to make the inventions claimed in our owned or licensed patents or pending patent applications, or were the first to file for patent protection of such inventions, or if such licensed patents rights may otherwise become invalid.

The patent position of biotechnology and pharmaceutical companies generally is uncertain, involves complex legal and factual questions and is the subject of much litigation. As a result, the issuance, scope, validity, enforceability and commercial value of our and our current or future licensors' patent rights are uncertain. Our and our licensors' pending and future patent applications may not result in patents being issued that protect our technology or products, in whole or in part, or which effectively exclude others from commercializing competitive technologies and products. The patent examination process may require us or our licensors to narrow the scope of the claims of our pending and future patent applications, and therefore, even if such patent applications issue as patents, they may not issue in a form that will provide us with any meaningful protection, prevent competitors or other third parties from competing with us, or otherwise provide us with any competitive advantage. Our and our licensors' patent applications cannot be enforced against third parties practicing the technology claimed in such applications unless and until a patent issues from such applications, and then only to the extent the issued claims cover such technology. Any of the foregoing could harm our competitive position, business, financial condition, results of operations and prospects.

If our trademarks and trade names are not adequately protected, then we may not be able to build name recognition in our marks of interest and our business may be adversely affected.

Our trademarks or trade names may be challenged, infringed, diluted, circumvented or declared generic or determined to be infringing on other marks. We intend to rely on both registration and common law protection for our trademarks. We may not be able to protect our rights to these trademarks and trade names or may be forced to stop using these names, which we need for name recognition by potential partners or customers in our markets of interest. During the trademark registration process, we may receive Office Actions from the United States Patent and Trademark Office ("USPTO"), objecting to the registration of our trademark. Although we would be given an opportunity to respond to those objections, we may be unable to overcome such rejections. In addition, in the USPTO and in comparable agencies in many foreign jurisdictions, third parties are given an opportunity to oppose pending trademark applications and/or to seek the cancellation of registered trademarks. Opposition or cancellation proceedings may be filed against our trademarks, and our trademarks may not survive such proceedings. If we are unable to obtain a registered trademark or establish name recognition based on our trademarks and trade names, we may not be able to compete effectively and our business may be adversely affected.

If we are unable to protect the confidentiality of our trade secrets, our business and competitive position would be harmed.

We rely on trade secrets and confidentiality agreements to protect our unpatented know-how, technology and other proprietary information and to maintain our competitive position. Trade secrets and know-how can be difficult to protect. We seek to protect these trade secrets and other proprietary technology, in part, by entering into non-disclosure and confidentiality agreements with parties who have access to them, such as our employees, collaborators, CROs, contract manufacturers, consultants, advisors and other third parties. We also enter into confidentiality and invention or patent assignment agreements with our employees and consultants. We cannot guarantee that we have entered into such agreements with each party that may have or has had access to our trade secrets or proprietary technology and processes. Despite these efforts, any of these parties may breach the agreements and disclose our proprietary information, including our trade secrets, and we may not be able to obtain adequate remedies for such breaches. These risks are heightened due to our reliance on third parties, including third party consultants, CROs and CMOs, for certain aspects of our business. The activities conducted by our third party vendors require us to share our trade secrets with them, which increases the possibility that a competitor will discover them or that our trade secrets will be misappropriated or disclosed. Enforcing a claim that a party illegally disclosed or misappropriated a trade secret is difficult, expensive and time-consuming, and the outcome is unpredictable. In addition, some courts inside and outside the United States are less willing or unwilling to protect trade secrets. If any of our trade secrets were to be lawfully obtained or independently developed by a competitor or other third party, we would have no right to prevent them from using that technology or information to compete with us. If any of our trade secrets were to be disclosed to or independently developed by a competitor or other third party, our competitive position would be materially and adversely harmed.

Third-party claims of intellectual property infringement, misappropriation or other violations may be costly and time consuming and may prevent or delay our product discovery and development efforts.

Third parties may initiate legal proceedings alleging that we are infringing, misappropriating, or otherwise violating their intellectual property rights, the outcome of which would be uncertain and could have a material adverse effect on the success of our business. Our commercial success depends upon our ability to develop, manufacture, market and sell our current and future product candidates and use our proprietary technologies without infringing, misappropriating or otherwise violating the intellectual property rights of third parties. There is a substantial amount of litigation involving patents and other intellectual property rights in the biotechnology and pharmaceutical industries, as well as administrative proceedings for challenging patents, including derivation, interference, reexamination, inter partes review, and post grant review proceedings before the USPTO or oppositions and other comparable proceedings in foreign jurisdictions. We or any of our future licensors or strategic partners may be party to, exposed to, or threatened with, future adversarial proceedings or litigation by third parties having patent or other intellectual property rights alleging that our current or future product candidates and/or proprietary technologies infringe, misappropriate or otherwise violate their intellectual property rights. Even if we believe third-party intellectual property claims are without merit, there is no assurance that a court would find in our favor on questions of infringement, validity, enforceability, or priority. With regard to our subsidiary Capella Bioscience, we are aware of issued patents in Europe owned by La Jolla Institute of Allergy and Immunology (the "La Jolla patents") that are directed to a method of treatment with an inhibitor of LIGHT. The La Jolla patents could be construed to cover, and the owner of such patent may claim that its patents do cover, certain product candidates and technologies, including Capella Bioscience's anti-LIGHT antibody in certain treatment indications in certain European jurisdictions. The La Jolla patents are expected to expire in 2028, without taking into account any possible patent term adjustments or extensions. The La Jolla patents are currently subject to an opposition proceeding at the EPO brought by European Oppositions Limited which may result in a narrowing of the patents scope or loss of rights under the patents or the patents may be upheld in their granted form. There can be no assurance that the challenge by European Oppositions Limited against the La Jolla patents, or other proceedings challenging the La Jolla patents, will be successful. Depending on the outcome of challenges to the La Jolla patents, Capella Bioscience's product launch in Europe, if a product is approved, may need to be delayed until after the expiry of the La Jolla patents.

We cannot assure you that our product candidates and other technologies that we have developed, are developing or may develop in the future do not or will not infringe, misappropriate or otherwise violate existing or future patents or other intellectual property rights owned by third parties. Numerous U.S. and foreign issued patents and pending patent applications, which are owned by third parties, exist in the fields in which we are developing our product candidates. As the biotechnology and pharmaceutical industries expand and more patents are issued, the risk increases that our product candidates may give rise to claims of infringement of the patent rights of others. Moreover, it is not always clear to industry participants, including us, which patents cover various types of drugs, products or their methods of use or manufacture. Thus, because of the large number of patents issued and patent applications filed in our fields, there may be a risk that third parties may allege they have patent rights encompassing our product candidates, technologies or methods.

If a third party claims that we infringe, misappropriate or otherwise violate its intellectual property rights, we may face a number of issues, including, but not limited to:

- infringement, misappropriation and other intellectual property claims which, regardless of merit, may be expensive and time-consuming to litigate and may divert our management's attention from our core business and may impact our reputation;
- substantial damages for infringement, misappropriation or other violations, which we may have to pay if a court decides that the product candidate or technology at issue infringes, misappropriates or violates the third party's rights, and, if the court finds that the infringement was willful, we could be ordered to pay treble damages and the patent owner's attorneys' fees;
- a court prohibiting us from developing, manufacturing, marketing or selling our product candidates, or from using our proprietary technologies, unless the third party licenses its product rights to us, which it is not required to do, on commercially reasonable terms or at all;
- if a license is available from a third party, we may have to pay substantial royalties, upfront fees and other amounts, and/or grant cross-licenses to intellectual property rights for our products, or the license to us may be non-exclusive, which would permit third parties to use the same intellectual property to compete with us;
- redesigning our product candidates or processes so they do not infringe, misappropriate or violate third party intellectual property rights, which may not be possible or may require substantial monetary expenditures and time; and
- there could be public announcements of the results of hearings, motions or other interim proceedings or developments, and, if securities analysts or investors perceive these results to be negative, it could have a substantial adverse effect on the price of our ADSs.

Some of our competitors may be able to sustain the costs of complex patent litigation more effectively than we can because they have substantially greater resources. In addition, any uncertainties resulting from the initiation and continuation of any litigation could have a material adverse effect on our ability to raise the funds necessary to continue our operations or could otherwise have a material adverse effect on our business, results of operations, financial condition and prospects. The occurrence of any of the foregoing could have a material adverse effect on our business, financial condition, results of operations or prospects.

We may choose to challenge the patentability of claims in a third party's U.S. patent by requesting that the USPTO review the patent claims in an ex-parte re-exam, inter partes review or post-grant review proceedings. These proceedings are expensive and may consume our time or other resources. We may choose to challenge a third party's patent in patent opposition proceedings in the European Patent Office ("EPO"), or other foreign patent office. The costs of these opposition proceedings could be substantial, and may consume our time or other resources. If we fail to obtain a favorable result at the USPTO, EPO or other patent office then we may be exposed to litigation by a third party alleging that the patent may be infringed by our product candidates or proprietary technologies.

Third parties may assert that we are employing their proprietary technology without authorization. Patents issued in the United States by law enjoy a presumption of validity that can be rebutted only with evidence that is "clear and convincing," a heightened standard of proof. There may be issued third-party patents of which we are currently unaware with claims to compositions, formulations, methods of manufacture or methods for treatment related to the use or manufacture of our product candidates. Patent applications can take many years to issue. In addition, because some patent applications in the United States may be maintained in secrecy until the patents are issued, patent applications in the United States and many foreign jurisdictions are typically not published until 18 months after filing, and publications in the scientific literature often lag behind actual discoveries, we cannot be certain that others have not filed patent applications covering our product candidates or technology. If any such patent applications issue as patents, and if such patents have priority over our patent applications or patents we may own or in-license, we may be required to obtain rights to such patents owned by third parties which may not be available on commercially reasonable terms or at all, or may only be available on a non-exclusive basis. There may be currently pending patent applications which may later result in issued patents that our product candidates may infringe. It is also possible that patents owned by third parties of which we are aware, but which we do not believe are relevant to our product candidates or other technologies, could be found to be infringed by our product candidates or other technologies. In addition, third parties may obtain patents in the future and claim that use of our technologies infringes upon these patents. Moreover, we may fail to identify relevant patents or incorrectly conclude that a patent is invalid, not enforceable, exhausted, or not infringed by our activities. If any third-party patents were held by a court of competent jurisdiction to cover the manufacturing process of our product candidates,

molecules used in or formed during the manufacturing process, or any final product itself, the holders of any such patents may be able to block our ability to commercialize the product candidate unless we obtained a license under the applicable patents, or until such patents expire or they are finally determined to be held invalid or unenforceable. Similarly, if any third-party patent were held by a court of competent jurisdiction to cover aspects of our formulations, processes for manufacture or methods of use, including combination therapy or patient selection methods, the holders of any such patent may be able to block our ability to develop and commercialize the product candidate unless we obtained a license or until such patent expires or is finally determined to be held invalid or unenforceable. In either case, such a license may not be available on commercially reasonable terms or at all. If we are unable to obtain a necessary license to a third-party patent on commercially reasonable terms, or at all, our ability to commercialize our product candidates may be impaired or delayed, which could in turn significantly harm our business. Even if we obtain a license, it may be nonexclusive, thereby giving our competitors access to the same technologies licensed to us. In addition, if the breadth or strength of protection provided by our patent applications or any patents we may own or in-license in the future is threatened, it could dissuade companies from collaborating with us to license, develop or commercialize current or future product candidates.

Parties making claims against us may seek and obtain injunctive or other equitable relief, which could effectively block our ability to further develop and commercialize our product candidates. Defense of these claims, regardless of their merit, could involve substantial litigation expense and would be a substantial diversion of employee resources from our business. In the event of a successful claim of infringement, misappropriation or other violation against us, we may have to pay substantial damages, including treble damages and attorneys' fees for willful infringement, obtain one or more licenses from third parties, pay royalties or redesign our infringing products, which may be impossible or require substantial time and monetary expenditure. We cannot predict whether any such license would be available at all or whether it would be available on commercially reasonable terms. Furthermore, even in the absence of litigation, we may need or may choose to obtain licenses from third parties to advance our research or allow commercialization of our product candidates. We may fail to obtain any of these licenses at a reasonable cost or on reasonable terms, if at all. In that event, we would be unable to further develop and commercialize our product candidates, which could harm our business significantly.

We may become involved in lawsuits to protect or enforce our patents or other intellectual property, which could be expensive, time-consuming and unsuccessful, and issued patents covering our technology and product candidates could be found invalid or unenforceable if challenged.

Competitors and other third parties may infringe or otherwise violate our issued patents or other intellectual property or the patents or other intellectual property of our licensors. In addition, our patents or the patents of our licensors may become involved in inventorship or priority disputes. Our pending patent applications cannot be enforced against third parties practicing the technology claimed in such applications unless and until a patent issues from such applications. To counter infringement or other unauthorized use, we may be required to file infringement claims, which can be expensive and time-consuming. Any claims we assert against perceived infringers could provoke these parties to assert counterclaims against us alleging that we infringe their patents or that our patents or our licensed patents are invalid or unenforceable. In a patent infringement proceeding, a court may decide that a patent of ours or a licensed patent is invalid or unenforceable, in whole or in part, construe the patent's claims narrowly or refuse to stop the other party from using the technology at issue on the grounds that our patents do not cover the technology. An adverse result in any litigation proceeding could put one or more of our owned or licensed patents at risk of being invalidated, held unenforceable or interpreted narrowly. We may find it impractical or undesirable to enforce our intellectual property against some third parties.

If we were to initiate legal proceedings against a third party to enforce a patent directed to our product candidates, or one of our future product candidates, the defendant could counterclaim that our patent is invalid or unenforceable. In patent litigation in the United States, defendant counterclaims alleging invalidity or unenforceability are commonplace. Grounds for a validity challenge could be an alleged failure to meet any of several statutory requirements, including lack of novelty, obviousness, non-enablement or insufficient written description. Grounds for an unenforceability assertion could be an allegation that someone connected with prosecution of the patent withheld relevant information from the USPTO or made a misleading statement during prosecution. Third parties may also raise similar claims before the USPTO or an equivalent foreign body, even outside the context of litigation. Potential proceedings include re-examination, post-grant review, inter partes review, interference proceedings, derivation proceedings and equivalent proceedings in foreign jurisdictions (e.g., opposition proceedings). Such proceedings could result in the revocation of, cancellation of, or amendment to our patents in such a way that they no longer cover our technology or any product candidates that we may develop. The outcome following legal assertions of invalidity and unenforceability is unpredictable. With respect to the validity question, for example, we cannot be certain that there is no invalidating prior art of which we and the patent examiner were unaware during prosecution. If a defendant were to prevail on a legal assertion of invalidity or unenforceability, we would lose at least part, and perhaps all, of the patent protection on the applicable product candidates

or technology covered by the patent rendered invalid or unenforceable. Such a loss of patent protection would materially harm our business, financial condition, results of operations and prospects.

Interference proceedings provoked by third parties or brought by us or declared by the USPTO may be necessary to determine the priority of inventions with respect to our patents or patent applications. An unfavorable outcome could require us to cease using the related technology or to attempt to license rights to it from the prevailing party. Our business could be materially harmed if the prevailing party does not offer us a license on commercially reasonable terms.

Furthermore, because of the substantial amount of discovery required in connection with intellectual property litigation, there is a risk that some of our confidential information could be compromised by disclosure during this type of litigation.

Our competitors maybe larger than we are and may have substantially greater resources. They are, therefore, likely to be able to sustain the costs of complex patent litigation or proceedings more effectively than we can because of their greater financial resources and more mature and developed intellectual property portfolios. Accordingly, despite our efforts, we may not be able to prevent third parties from infringing upon, misappropriating or otherwise violating our intellectual property. Even if resolved in our favor, litigation or other legal proceedings relating to intellectual property claims could result in substantial costs and diversion of management resources, which could harm our business. In addition, the uncertainties associated with litigation could compromise our ability to raise the funds necessary to continue our clinical trials, continue our internal research programs, or in-license needed technology or other product candidates. There could also be public announcements of the results of the hearing, motions, or other interim proceedings or developments. If securities analysts or investors perceive those results to be negative, it could cause the price of shares of our ADSs to decline. Any of the foregoing events could harm our business, financial condition, results of operation and prospects.

Intellectual property litigation could cause us to spend substantial resources and distract our personnel from their normal responsibilities.

Even if resolved in our favor, litigation or other legal proceedings relating to intellectual property claims may cause us to incur significant expenses, and could distract our technical and management personnel from their normal responsibilities. In addition, there could be public announcements of the results of hearings, motions or other interim proceedings or developments and if securities analysts or investors perceive these results to be negative, it could have a substantial adverse effect on the price of our ADSs. Such litigation or proceedings could substantially increase our operating losses and reduce the resources available for development activities or any future sales, marketing or distribution activities. We may not have sufficient financial or other resources to conduct such litigation or proceedings adequately. Some of our competitors may be able to sustain the costs of such litigation or proceedings more effectively than we can because of their greater financial resources. Uncertainties resulting from the initiation and continuation of patent litigation or other proceedings could compromise our ability to compete in the marketplace, including compromising our ability to raise the funds necessary to continue our clinical trials, continue our research programs, license necessary technology from third parties, or enter into development collaborations that would help us commercialize our product candidates, if approved. Any of the foregoing events would harm our business, financial condition, results of operations and prospects.

The patent protection we obtain for our product candidates and technology may be challenged or not sufficient enough to provide us with any competitive advantage.

Even if our owned or licensed patent applications issue as patents, the issuance of any such patents is not conclusive as to their inventorship, scope, validity, or enforceability, and such patents may be challenged, invalidated or held to be unenforceable, including in the courts or patent offices in the United States and abroad, or circumvented. We may be subject to a third party pre issuance submission of prior art to the USPTO, or equivalent foreign bodies, or become involved in opposition, derivation, revocation, re-examination, post-grant and inter partes review, or interference proceedings challenging our patent rights or the patent rights of others.

Currently, one of our in-licensed European patents related to Morphogen's MGX292 is involved in a European opposition proceeding at the EPO. While we and the licensor are defending against this opposition, there is a risk that one or more of the grounds raised by the opponents will invalidate one or more of the granted claims or require an amendment of the claims in a way that does not cover our product candidates. This may prevent us from asserting this patent against our competitors marketing otherwise infringing products in relevant European countries where this patent has been granted.

An adverse determination in any such submission, proceeding or litigation could reduce the scope of, or invalidate, our patent rights, allow third parties to commercialize our technology or products and compete directly with us, without payment to us, or result in our inability to manufacture or commercialize products without infringing third-party patent rights. Moreover, we, or one of our licensors, may have to participate in interference proceedings declared by the USPTO to determine priority of invention or in post-grant challenge proceedings, such as oppositions in a foreign patent office, that challenge priority of invention or other features of patentability. Such proceedings and any other patent challenges may result in loss of patent rights, loss of exclusivity, loss of priority, or in patent claims being narrowed, invalidated, or held unenforceable, which could limit our ability to stop others from using or commercializing similar or identical technology and products, or limit the duration of the patent protection of our technology and product candidates. Such proceedings also may result in substantial cost and require significant time from our scientists and management, even if the eventual outcome is favorable to us. Any of the foregoing could harm our business, financial condition, results of operations and prospects.

Furthermore, given the amount of time required for the development, testing and regulatory review of new product candidates, patents protecting such candidates might expire before or shortly after such candidates are commercialized. As a result, our owned and licensed patent portfolios may not provide us with adequate protection against third parties seeking to commercialize products similar or identical to ours. We expect to request extensions of patent terms to the extent available in countries where we obtain issued patents. In the United States, the Drug Price Competition and Patent Term Restoration Act of 1984 permits a patent term extension of up to five years beyond the expiration of the patent. However, there are no assurances that the FDA or any comparable foreign regulatory authority or national patent office will grant such extensions, in whole or in part. In such case, our competitors may launch their products earlier than might otherwise be anticipated. Moreover, some of our owned or in-licensed patents and patent applications are, and may in the future be, co-owned with third parties. If we are unable to obtain an exclusive license to any such co-owners' interest in such patents or patent applications, such co-owners may be able to license their rights to other third parties, including our competitors, and our competitors could market competing products and technology. In addition, we may need the cooperation of any such co-owners in order to enforce such patents against third parties, and such cooperation may not be provided to us.

In addition, our owned and in-licensed patents may be subject to a reservation of rights by the licensor, its affiliates and one or more third parties. When new technologies are developed with government funding, the government generally obtains certain rights in any resulting patents, including a non-exclusive license authorizing the government to use the invention for noncommercial purposes. These rights may permit the government to disclose our confidential information to third parties or allow third parties to use our licensed technology. The government can also exercise its march-in rights if it determines that action is necessary because we fail to achieve practical application of the government-funded technology, because action is necessary to alleviate health or safety needs, to meet requirements of federal regulations, or to give preference to U.S. industry. In addition, our rights in such inventions may be subject to certain requirements to manufacture products embodying such inventions in the United States. Any of the foregoing could harm our competitive position, business, financial condition, results of operations and prospects.

We may be subject to claims by third parties asserting that we or our employees have infringed upon, misappropriated or otherwise violated their intellectual property rights, or claiming ownership of what we regard as our own intellectual property.

Many of our employees were previously employed at other biotechnology or pharmaceutical companies. Although we try to ensure that our employees, consultants and advisors do not use the proprietary information or know-how of others in their work for us, we may be subject to claims that we or these individuals have used or disclosed intellectual property, including trade secrets or other proprietary information, of any such individual's former employer. Litigation may be necessary to defend against these claims.

In addition, we or our licensors may be subject to claims that former employees, collaborators, or other third parties have an interest in our owned or in-licensed patents or other intellectual property as an inventor or co-inventor. While it is our policy to require our employees and contractors who may be involved in the development of intellectual property to execute agreements assigning such intellectual property to us, we may be unsuccessful in executing such an agreement with each party who in fact develops intellectual property that we regard as our own. Our and their assignment agreements may not be self-executing or may be breached, and we may be forced to bring claims against third parties, or defend claims they may bring against us, to determine the ownership of what we regard as our intellectual property.

If we fail in prosecuting or defending any such claims, in addition to paying monetary damages, we may lose valuable intellectual property rights or personnel. Even if we are successful in prosecuting or defending against such claims, litigation could result in substantial costs, delay development of our product candidates and be a distraction to management. Any of the foregoing events would harm our business, financial condition, results of operations and prospects.

We may not be able to protect our intellectual property rights throughout the world.

Filing, prosecuting, maintaining, defending and enforcing patents on our product candidates in all countries throughout the world would be prohibitively expensive, and our intellectual property rights in some countries outside the United States can be less extensive than those in the United States. In addition, the laws of some foreign countries do not protect intellectual property rights to the same extent as federal and state laws in the United States. Consequently, we may not be able to prevent third parties from practicing our inventions in all countries outside the United States, or from selling or importing products made using our inventions in and into the United States or other jurisdictions. Competitors may use our technologies in jurisdictions where we have not obtained patent protection to develop their own drugs and may export otherwise infringing drugs to territories where we have patent protection, but enforcement rights are not as strong as those in the United States. These drugs may compete with our product candidates and our patents or other intellectual property rights may not be effective or sufficient to prevent them from competing.

Many companies have encountered significant problems in protecting and defending intellectual property rights in foreign jurisdictions. The legal systems of some countries do not favor the enforcement of patents and other intellectual property protection, which could make it difficult for us to stop the infringement of our patents generally. Proceedings to enforce our patent rights in foreign jurisdictions could result in substantial costs and divert our efforts and attention from other aspects of our business, could put our patents at risk of being invalidated or interpreted narrowly and our patent applications at risk of not issuing and could provoke third parties to assert claims against us. We may not prevail in any lawsuits that we initiate, and the damages or other remedies awarded, if any, may not be commercially meaningful.

Many countries, including major European Union countries, India, Japan and China, have compulsory licensing laws under which a patent owner may be compelled under specified circumstances to grant licenses to third parties. In addition, many countries limit the enforceability of patents against government agencies or government contractors. In those countries, we may have limited remedies if patents are infringed or if we are compelled to grant a license to a third party, which could materially diminish the value of those patents. This could limit our potential revenue opportunities. Accordingly, our efforts to enforce our intellectual property rights around the world may be inadequate to obtain a significant commercial advantage from the intellectual property that we develop or license, which could adversely affect our business, financial condition, results of operations and prospects.

A number of our programs and associated product candidates are heavily dependent on licensed intellectual property. If we were to lose our rights to licensed intellectual property, we may not be able to continue developing or commercializing our product candidates, if approved. If we breach any of the agreements under which we license the use, development and commercialization rights to our product candidates or technology from third parties or, in certain cases, we fail to meet certain development deadlines, we could lose license rights that are important to our business.

We are heavily reliant upon licenses to certain patent rights and other intellectual property from third parties that are important or necessary to the development of our product candidates. We may also need to obtain additional licenses to advance the development and commercialization of other product candidates we may develop. We expect that future license agreements will impose upon us, various development, regulatory and or commercial diligence obligations, payment of milestones and/or royalties and other obligations. If we fail to comply with our obligations under these agreements, or we are subject to a bankruptcy-related event, the licensor may have the right to terminate the license, in which event we would not be able to develop, market or otherwise commercialize products covered by the license, and in some instances, may be also obligated to transfer back to licensor our developments related to the licensed product and associated regulatory rights. Our business could suffer, for example, if any current or future licenses terminate, if the licensors fail to abide by the terms of the license, if the licensed patents or other rights are found to be invalid or unenforceable, or if we are unable to enter into necessary licenses on acceptable terms.

Licensing of intellectual property is of critical importance to our business and involves complex legal, business and scientific issues and certain provisions in intellectual property license agreements may be susceptible to multiple

interpretations. Disputes may arise between us and our licensors regarding intellectual property subject to a license agreement, including:

- the scope of rights granted under the license agreement and other interpretation-related issues;
- whether and the extent to which our technology and processes infringe on intellectual property of the licensor that is not subject to the licensing agreement;
- our right to transfer, assign, or sublicense patent and other rights to third parties;
- our diligence obligations with respect to the use of the licensed technology in relation to our development and commercialization of our product candidates, and what activities satisfy those diligence obligations;
- the ownership of inventions and know-how resulting from the joint creation or use of intellectual property by our licensors and us and our partners;
- our right to transfer or assign the license;
- the ability and effects of termination; and
- restrictive covenants that may restrict our abilities to compete or market competing products.

The resolution of any contract interpretation disagreement that may arise could narrow what we believe to be the scope of our rights to the relevant intellectual property or technology, or increase what we believe to be our financial or other obligations under the relevant agreement, either of which could harm our business, financial condition, results of operations and prospects. Moreover, if disputes over intellectual property that we have licensed prevent or impair our ability to maintain our current licensing arrangements on acceptable terms, we may be unable to successfully develop and commercialize the affected product candidates.

We may enter into additional licenses to third-party intellectual property that are necessary or useful to our business. Our current licenses and any future licenses that we may enter into impose various fees, royalty payment, milestone and other obligations on us. Under some license agreements, we may not control prosecution of the licensed intellectual property, or may not have the first right to enforce the intellectual property. In those cases, we may not be able to adequately influence patent prosecution or enforcement, or prevent inadvertent lapses of coverage due to failure to pay maintenance fees. If we fail to comply with any of our obligations under a current or future license agreement, the licensor may allege that we have breached our license agreement, and may accordingly seek to terminate our license. Termination of any of our current or future licenses could result in our loss of the right to use the licensed intellectual property, which could materially adversely affect our ability to develop and commercialize a product candidate or product, if approved, as well as harm our competitive business position and our business prospects. Under some license agreements, termination may also result in the transfer or granting of rights under certain of our intellectual property and information related to the product candidate being developed under the license, such as regulatory information.

In addition, if our licensors fail to abide by the terms of the license, if the licensors fail to prevent infringement by third parties, if the licensed patents or other rights are found to be invalid or unenforceable, or if we are unable to enter into necessary licenses on acceptable terms, our business, competitive position, financial condition, results of operations and prospects could be materially harmed.

Patent terms may be inadequate to protect our competitive position on our product candidates for an adequate amount of time. If we are not able to obtain patent term extension or non-patent exclusivity in the United States under the Hatch-Waxman Act and in foreign countries under similar legislation, thereby potentially extending the marketing exclusivity term of our product candidates, our business may be materially harmed.

Patents have a limited lifespan. In the United States, if all maintenance fees are timely paid, the natural expiration of a patent is generally 20 years from its earliest U.S. non-provisional filing date. Various extensions may be available, but the life of a patent, and the protection it affords, is limited. Even if patents covering our product candidates are obtained, once the patent life has expired for a product candidate, we may be open to competition from competitive medications, including generic medications. Given the amount of time required for the development, testing and regulatory review of new product candidates, patents protecting such product candidates might expire before or shortly after such product candidates are commercialized. As a result, our owned and licensed patent portfolio may not provide us with sufficient rights to exclude others from commercializing product candidates similar or identical to ours.

For instance, for our subsidiary, Pega-One SAS, in-licensed patents and patent applications directed to imgatuzumab and uses thereof are expected to expire between 2026 and 2028, which do not include any possible patent term extension. Our in-licensed patents may expire before, or soon after, our first product achieves marketing approval in the United States or foreign jurisdictions. Upon the expiration of our current patents, we may lose the right to exclude others from practicing these inventions. The expiration of these patents could also have a similar material adverse effect on our business, financial condition, prospects and results of operations.

For our subsidiary, Palladio Biosciences, the earliest in-licensed patents directed to composition of matter of lixivaptan and certain methods of use related to lixivaptan have expired. The expiration of these patents could have a material adverse effect on our business, financial condition, prospects and results of operations. We own pending patent applications directed to methods of treatment with lixivaptan that, if issued as patents, are expected to expire in 2038, without taking into account any possible patent term adjustments or extensions. However, we cannot be assured that the USPTO or relevant foreign patent offices will grant any of these patent applications.

With respect to Pega-One, we intend to utilize new preclinical, clinical and combination proprietary data to expand the product-specific patents estate. Additionally, with respect to our biologics products, we hope to take advantage of enhanced regulatory exclusivity periods, such as the 12 years of regulatory exclusivity available to biologics manufacturers under the Biologics Competition and Innovation Act of 2009. However, despite these measures, we may still lose the right the exclude others from practicing these inventions, which may negatively impact our business.

Depending upon the timing, duration and conditions of any FDA marketing approval of our product candidates, one or more of our U.S. patents may be eligible for limited patent term extension under the Drug Price Competition and Patent Term Restoration Act of 1984, referred to as the Hatch-Waxman Amendments, and similar legislation in the European Union. The Hatch-Waxman Amendments permit a patent term extension of up to five years for a patent covering an approved product as compensation for effective patent term lost during product development and the FDA regulatory review process. However, we may not receive an extension if we fail to exercise due diligence during the testing phase or regulatory review process, fail to apply within applicable deadlines, fail to apply prior to expiration of relevant patents or otherwise fail to satisfy applicable requirements. Moreover, the length of the extension could be less than we request. Only one patent per approved product can be extended, the extension cannot extend the total patent term beyond 14 years from approval and only those claims covering the approved drug, a method for using it or a method for manufacturing it may be extended. If we are unable to obtain patent term extension or the term of any such extension is less than we request, the period during which we can enforce our patent rights for the applicable product candidate will be shortened and our competitors may obtain approval to market competing products sooner. As a result, our revenue from applicable products could be reduced. Further, if this occurs, our competitors may take advantage of our investment in development and trials by referencing our clinical and preclinical data and launch their product earlier than might otherwise be the case, and our competitive position, business, financial condition, results of operations and prospects could be materially harmed.

Changes in patent law could diminish the value of patents in general, thereby impairing our ability to protect our product candidates.

Obtaining and enforcing patents in the pharmaceutical industry is inherently uncertain, due in part to ongoing changes in the patent laws. Depending on decisions by Congress, the federal courts, and the USPTO, the laws and regulations governing patents, and interpretation thereof, could change in unpredictable ways that could weaken our and our licensors' or collaborators' ability to obtain new patents or to enforce existing or future patents. For example, the Supreme Court has ruled on several patent cases in recent years, either narrowing the scope of patent protection available in certain circumstances or weakening the rights of patent owners in certain situations. Therefore, there is increased uncertainty with regard to our and our licensors' or collaborators' ability to obtain patents in the future, as well as uncertainty with respect to the value of patents once obtained.

Recent patent reform legislation could increase the uncertainties and costs surrounding the prosecution of our and our licensors' or collaborators' patent applications and the enforcement or defense of our or our licensors' or collaborators' issued patents. Assuming that other requirements for patentability are met, prior to March 2013, in the United States, the first to invent the claimed invention was entitled to the patent, while outside the United States, the first to file a patent application was entitled to the patent. After March 2013, under the Leahy-Smith America Invents Act (the Leahy-Smith Act), enacted in September 2011, the United States transitioned to a first inventor to file system in which, assuming that other requirements for patentability are met, the first inventor to file a patent application will be entitled to the patent on an invention regardless of whether a third party was the first to invent the claimed invention. The Leahy-Smith Act also includes a number of significant changes that affect the way patent applications are prosecuted and may also affect patent

litigation. These include allowing third party submission of prior art to the USPTO during patent prosecution and additional procedures to attack the validity of a patent by USPTO-administered post-grant proceedings, including post-grant review, inter partes review and derivation proceedings. The USPTO recently developed new regulations and procedures to govern administration of the Leahy-Smith Act, and many of the substantive changes to patent law associated with the Leahy-Smith Act, particularly the first inventor-to-file provisions. Accordingly, it is not clear what, if any, impact the Leahy-Smith Act will have on the operation of our business. However, the Leahy-Smith Act and its implementation could increase the uncertainties and costs surrounding the prosecution of our or our licensors' patent applications and the enforcement or defense of our or our licensors' issued patents, all of which could harm our business, financial condition, results of operations and prospects.

Intellectual property rights do not necessarily address all potential threats.

The degree of future protection afforded by our intellectual property rights is uncertain because intellectual property rights have limitations and may not adequately protect our business or permit us to maintain our competitive advantage. For example:

- others may be able to make products that are similar to any product candidates we may develop or utilize similar technology but that are not covered by the claims of the patents that we license or may own in the future;
- we, or our current or future licensors might not have been the first to make the inventions covered by the issued patent or pending patent application that we license or may own in the future;
- we, or our current or future licensors might not have been the first to file patent applications covering certain of our or their inventions;
- others may independently develop similar or alternative technologies or duplicate any of our technologies without infringing our owned or licensed intellectual property rights;
- it is possible that our pending owned or licensed patent applications or those that we may own or license in the future will not lead to issued patents;
- issued patents that we hold rights to may be held invalid or unenforceable, including as a result of legal challenges by our competitors;
- our competitors might conduct research and development activities in countries where we do not have patent rights and then use the information learned from such activities to develop competitive products for sale in our major commercial markets;
- we may not develop additional proprietary technologies that are patentable;
- the patents of others may harm our business; and
- we may choose not to file a patent in order to maintain certain trade secrets or know-how, and a third party may subsequently file a patent covering such intellectual property.

Should any of these events occur, they could harm our business, financial condition, results of operations and prospects.

Obtaining and maintaining our patent protection depends on compliance with various procedural, document submission, fee payment and other requirements imposed by governmental patent agencies, and our patent protection could be reduced or eliminated for non-compliance with these requirements.

Periodic maintenance fees, renewal fees, annuity fees and various other governmental fees on patents and/or applications will be due to be paid to the USPTO and various governmental patent agencies outside of the United States in several stages over the lifetime of the patents and/or applications. We have systems in place to remind us to pay these fees, and we employ an outside firm and rely on our outside counsel to pay these fees due to non-U.S. patent agencies. The USPTO and various non-U.S. governmental patent agencies require compliance with a number of procedural, documentary, fee payment and other similar provisions during the patent application process. We employ reputable law firms and other professionals to help us comply, and in many cases, an inadvertent lapse can be cured by payment of a late fee or by other means in accordance with the applicable rules. However, there are situations in which non-compliance can result in abandonment or lapse of the patent or patent application, resulting in partial or complete loss of patent rights in the

relevant jurisdiction. In such an event, our competitors might be able to enter the market and this circumstance would have a material adverse effect on our business.

We engage a number of consultants employed by academic institutions in jurisdictions that contain inventorship laws mandating that any inventions developed by such consultants whilst performing consultancy services automatically or otherwise shall reside in the employing institution and granting such institutions the first right to develop and/or commercialize such inventions. We may not be able to secure rights (whether through ownership or license interest) in inventions developed by such consultants during performance of consulting services for our companies.

We enter into confidentiality and intellectual property assignment agreements with our employees, consultants, outside scientific collaborators, sponsored researchers and other advisors. These agreements generally provide that inventions conceived by the party in the course of rendering services to us will be our exclusive property. However, these agreements may not be honored and may not effectively assign intellectual property rights to us. For example, even if we have a consulting agreement in place with an academic advisor pursuant to which such academic advisor is required to assign any inventions developed in connection with providing services to us, such academic advisor may not have the right to assign such inventions to us, as it may conflict with his or her obligations to assign their intellectual property to his or her employing institution.

Despite our undertaking of the measures listed above, we are subject to claims challenging the inventorship or ownership of our patents and other intellectual property and may be subject to further claims in the future. For example, our subsidiary PearlRiver entered into consulting arrangements with a number of its founders and other investigators who, in each case, are employed by or affiliated with certain universities in Germany. The consulting arrangements provide that in the event such consultants invent during the course of performing activities for PearlRiver, such invention shall nonetheless be owned by the employing university and the employing university would be entitled to commercialize the invention. In order for PearlRiver to gain access to such invention, it would need to negotiate and enter into a licensing arrangement with the employing university. There can be no assurances that PearlRiver would be successful in such negotiations or that a license would be obtained on favorable terms. Litigation may be necessary to defend against these and other claims challenging inventorship or ownership. If we fail in defending any such claims, in addition to paying monetary damages, we may lose valuable intellectual property rights, such as exclusive ownership of, or right to use, valuable intellectual property. Such an outcome could have a material adverse effect on our business. Even if we are successful in defending against such claims, litigation could result in substantial costs and be a distraction to management and other employees.

Certain of our employees and inventions are subject to German law.

Certain of our personnel work in Germany and are subject to German employment law. Inventions which may be the subject of a patent or of protection as a utility model and which are or were made by personnel working in Germany (except for legal representatives of our respective legal entities, for example managing directors) are subject to the provisions of the German Act on Employees' Inventions (Gesetz über Arbeitnehmererfindungen), or the German Inventions Act, which regulates the ownership of, and compensation for, inventions made by employees. We face the risk that disputes may occur between us and our current or past employees pertaining to the sufficiency of compensation paid by us, allocation of rights to inventions under this act or alleged non-adherence to the provisions of this act, any of which may be costly to resolve and take up our management's time and efforts whether we prevail or fail in such dispute. Even if we lawfully own all inventions created by our employees who are subject to the German Inventions Act, we are required under German law to reasonably compensate such employees for the use of the inventions and intellectual property rights related thereto. If we are required to pay compensation or face other disputes under the German Inventions Act, our results of operations could be adversely affected. Legal representatives of legal entities, for example managing directors, whose contractual relationships with the respective entity are subject to German law and that are not subject to the German Inventions Act as well as consultants must assign and transfer their interest in inventions and/or patents they invent or co-invent to us in order for us to have any rights to such inventions or patents.

There can be no assurance that all such assignments are fully effective, which may lead to unexpected costs or economic disadvantages and may harm our business, prospects, financial condition and results of operations. If any of our current or past employees, legal representatives of our legal entities or consultants obtain or retain ownership or co-ownership of any inventions or related intellectual property rights that we believe we own, we may lose valuable intellectual property rights and be required to obtain and maintain licenses from such employees or legal representatives of legal entities or consultants to such inventions or intellectual property rights, which may not be available on commercially reasonable terms or at all, or may be non-exclusive. If we are unable to obtain and maintain a license to any such

employee's, legal representative's of legal entities or consultant's interest in such inventions or intellectual property rights, we may need to cease the development, manufacture, and commercialization of one or more of the products or solutions we may develop or may have developed. In addition, any loss of exclusivity of our intellectual property rights could limit our ability to stop others from using or commercializing similar or identical products and solutions. Any of the foregoing events could have a material adverse effect on our business, financial condition, prospects and results of operations.

Risks Related to Commercialization

We have never commercialized a product candidate and we may lack the necessary expertise, personnel and resources to successfully commercialize any of our products that receive regulatory approval on our own or together with collaborators.

We have never commercialized a product candidate. Our operations to date have been limited to organizing and staffing our company, business planning, raising capital, acquiring the rights to our product candidates and undertaking preclinical studies and clinical trials of our product candidates. We currently have no sales force, marketing or distribution capabilities. To achieve commercial success of our product candidates, if any are approved, we will have to develop our own sales, marketing and supply capabilities or outsource these activities to a third party.

Factors that may affect our ability to commercialize our product candidates on our own include recruiting and retaining adequate numbers of effective sales and marketing personnel, obtaining access to or persuading adequate numbers of physicians to prescribe our product candidates and other unforeseen costs associated with creating an independent sales and marketing organization. Developing a sales and marketing organization requires significant investment, is time-consuming and could delay the launch of our product candidates. We may not be able to build an effective sales and marketing organization in the United States, the European Union, the United Kingdom or other key global markets. If we are unable to build our own distribution and marketing capabilities or to find suitable partners for the commercialization of our product candidates, we may have difficulties generating revenue from them.

The commercial success of any of our product candidates will depend upon its degree of market acceptance by physicians, patients, third-party payors and others in the medical community.

Ethical, social and legal concerns about our product candidates could result in additional regulations restricting or prohibiting our products. Even with the requisite approvals from the FDA in the United States, the European Commission (on the recommendation of the EMA) in the European Economic Area, the MHRA in the United Kingdom and other regulatory authorities internationally, the commercial success of our product candidates will depend, in part, on the acceptance of physicians, patients and health care payors of our product candidates as medically necessary, cost-effective and safe. Any product that we commercialize may not gain acceptance by physicians, patients, health care payors and others in the medical community. If these products do not achieve an adequate level of acceptance, we may not generate significant product revenue and may not become profitable. The degree of market acceptance of our product candidates, if approved for commercial sale, will depend on several factors, including:

- the efficacy and safety of such product candidates as demonstrated in clinical trials;
- the potential and perceived advantages of product candidates over alternative treatments;
- the cost of treatment relative to alternative treatments;
- the clinical indications for which the product candidate is approved by FDA, the EMA or the MHRA;
- patient awareness of, and willingness to seek, genotyping;
- the willingness of physicians to prescribe new therapies;
- the willingness of the target patient population to try new therapies;
- the prevalence and severity of any side effects;
- product labeling or product insert requirements of FDA, EMA, MHRA or other regulatory authorities, including any limitations or warnings contained in a product's approved labeling;
- relative convenience and ease of administration;
- the strength of marketing and distribution support;
- the timing of market introduction of competitive products;

- publicity concerning our products or competing products and treatments; and
- sufficient third-party payor coverage and reimbursement.

Even if a potential product displays a favorable efficacy and safety profile in preclinical studies and clinical trials, market acceptance of the product will not be fully known until after it is launched.

If the market opportunities for our product candidates are smaller than we believe they are, it may not be financially viable to commercialize, and if we do commercialize, our product revenues for any therapies that are approved for commercial sale may be adversely affected and our business may suffer.

We focus our research and product development on treatments for various diseases. Our understanding of both the number of people who have these diseases, as well as the subset of people with these diseases who have the potential to benefit from treatment with our product candidates, are based on estimates. These estimates may prove to be incorrect and new studies may reduce the estimated incidence or prevalence of these diseases. The number of patients in the United States, the European Union, the United Kingdom and elsewhere may turn out to be lower than expected, may not be otherwise amenable to treatment with our products or patients may become increasingly difficult to identify and access, all of which would adversely affect our business, financial condition, results of operations and prospects.

Further, there are several factors that could contribute to making the actual number of patients who receive our potential products less than the potentially addressable market. These include the lack of widespread availability of, and limited reimbursement for, new products or therapies in many underdeveloped markets.

If we are unable to establish sales, medical affairs and marketing capabilities or enter into agreements with third parties to market and sell our product candidates, we may be unable to generate any product revenue.

We currently have no sales and marketing organization. To successfully commercialize any products that may result from our development programs, we will need to develop these capabilities, either on our own or with others. The establishment and development of our own commercial team or the establishment of a contract sales force to market any products we may develop will be expensive and time-consuming and could delay any product launch. Moreover, we cannot be certain that we will be able to successfully develop this capability. We may enter into collaborations regarding our product candidates with entities to utilize their established marketing and distribution capabilities, but we may be unable to enter into such agreements on favorable terms, if at all. If any current or future collaborators do not commit sufficient resources to commercialize our products, or we are unable to develop the necessary capabilities on our own, we will be unable to generate sufficient product revenue to sustain our business. We compete with many companies that currently have extensive, experienced and well-funded medical affairs, marketing and sales operations to recruit, hire, train and retain marketing and sales personnel. We also face competition in our search for third parties to assist us with the sales and marketing efforts of our product candidates. Without an internal team or the support of a third party to perform marketing and sales functions, we may be unable to compete successfully against these more established companies.

Our efforts to educate the medical community and third-party payors on the benefits of our product candidates may require significant resources and may never be successful. Such efforts may require more resources than are typically required due to the complexity and uniqueness of our potential products. If any of our product candidates is approved but fails to achieve market acceptance among physicians, patients or third-party payors, we will not be able to generate significant revenues from such product, which could have a material adverse effect on our business, financial condition, results of operations and prospects.

Healthcare legislative reform measures may have a material adverse effect on our business and results of operations.

In the United States, there have been, and continue to be, several legislative initiatives to contain healthcare costs. For example, in March 2010, the Patient Protection and Affordable Care Act, as amended by the Health Care and Education Reconciliation Act ("ACA"), was passed, which substantially changes the way health care is financed by both the government and private insurers, and significantly impacts the U.S. pharmaceutical industry. See section entitled "*Business - Government Regulation - Health Reform.*"

Additionally, on July 9, 2021, President Biden issued an executive order directing the FDA to, among other things, continue to clarify and improve the approval framework for generic drugs and biosimilars, including the standards for interchangeability of biological products, facilitate the development and approval of biosimilar and interchangeable

products, clarify existing requirements and procedures related to the review and submission of BLAs, and identify and address any efforts to impede generic drug and biosimilar competition.

Additional changes that may affect our business include those governing enrollment in federal healthcare programs, reimbursement changes, rules regarding prescription drug benefits under the health insurance exchanges and fraud and abuse and enforcement. Continued implementation of the ACA and the passage of additional laws and regulations may result in the expansion of new programs such as Medicare payment for performance initiatives, and may impact existing government healthcare programs, such as by improving the physician quality reporting system and feedback program.

For each state that does not choose to expand its Medicaid program, there likely will be fewer insured patients overall, which could impact the sales, business and financial condition of manufacturers of branded prescription drugs. Where patients receive insurance coverage under any of the new options made available through the ACA, the possibility exists that manufacturers may be required to pay Medicaid rebates on that resulting drug utilization, a decision that could impact manufacturer revenues. The U.S. federal government also has announced delays in the implementation of key provisions of the ACA. The implications of these delays for our and our partners' business and financial condition, if any, are not yet clear.

We expect that additional state and federal healthcare reform measures will be adopted in the future, any of which could limit the amounts that federal and state governments will pay for healthcare products and services, which could result in reduced demand for our product candidates or additional pricing pressures.

Enacted and future legislation may increase the difficulty and cost for us to obtain marketing approval of and commercialize our product candidates and affect the prices we may charge for such product candidates.

The United States and many foreign jurisdictions have enacted or proposed legislative and regulatory changes affecting the healthcare system that could prevent or delay marketing approval of our product candidates, restrict or regulate post-approval activities and affect our ability to profitably sell any product for which we obtain marketing approval. See section entitled "*Business – Government Regulation – Health Reform*."

Moreover, increasing efforts by governmental and third-party payors in the United States and abroad to cap or reduce healthcare costs may cause such organizations to limit both coverage and the level of reimbursement for newly approved products and, as a result, they may not cover or provide adequate payment for our product candidates. There has been increasing legislative and enforcement interest in the United States with respect to specialty drug pricing practices. Specifically, there have been several recent U.S. Congressional inquiries and proposed and enacted federal and state legislation designed to, among other things, bring more transparency to drug pricing, reduce the cost of prescription drugs under Medicare, review the relationship between pricing and manufacturer patient programs, and reform government program reimbursement methodologies for drugs.

We expect that the healthcare reform measures that have been adopted and may be adopted in the future, may result in more rigorous coverage criteria and in additional downward pressure on the price that we receive for any approved product and could seriously harm our future revenues. Any reduction in reimbursement from Medicare or other government programs may result in a similar reduction in payments from private payors. The implementation of cost containment measures or other healthcare reforms may prevent us from being able to generate revenue, attain profitability or commercialize our products.

The insurance coverage and reimbursement status of newly-approved products is uncertain. Failure to obtain or maintain adequate coverage and reimbursement for our products, if approved, could limit our ability to market those products and decrease our ability to generate product revenue.

We expect the cost of our product candidates and programs, to be substantial, when and if they achieve regulatory approval. See section entitled "*Business - Government Regulation - Reimbursement.*" We expect that coverage and reimbursement by government and private payors will be essential for most patients to be able to afford these treatments. Accordingly, sales of our product candidates will depend substantially, both domestically and abroad, on the extent to which the costs of our product candidates will be paid by health maintenance, managed care, pharmacy benefit and similar healthcare management organizations, or will be reimbursed by government authorities, private health coverage insurers

and other third-party payors. Coverage and reimbursement by a third-party payor may depend upon several factors, including the third-party payor's determination that use of a product is:

- a covered benefit under its health plan;
- safe, effective and medically necessary;
- appropriate for the specific patient;
- cost-effective; and
- neither experimental nor investigational.

Obtaining coverage and reimbursement for a product from third-party payors is a time-consuming and costly process that could require us to provide to the payor supporting scientific, clinical and cost-effectiveness data. We may not be able to provide data sufficient to gain acceptance with respect to coverage and reimbursement. If coverage and reimbursement are not available, or are available only at limited levels, we may not be able to successfully commercialize our product candidates. Even if coverage is provided, the approved reimbursement amount may not be adequate to realize a sufficient return on our investment.

There is significant uncertainty related to third-party coverage and reimbursement of newly approved products. In the United States, third-party payors, including government payors such as the Medicare and Medicaid programs, play an important role in determining the extent to which new drugs and biologics will be covered and reimbursed. The Medicare and Medicaid programs increasingly are used as models for how private payors and government payors develop their coverage and reimbursement policies. It is difficult to predict what the CMS will decide with respect to coverage and reimbursement for fundamentally novel products, as there is no body of established practices and precedents for these types of products. Moreover, reimbursement agencies in the European Union may be more conservative than CMS. For example, several cancer drugs have been approved for reimbursement in the United States and have not been approved for reimbursement in certain European Union Member States. It is difficult to predict what third-party payors will decide with respect to the coverage and reimbursement for our product candidates.

Outside the United States, international operations generally are subject to extensive government price controls and other market regulations, and increasing emphasis on cost-containment initiatives in the European Union, Canada and other countries may put pricing pressure on us. In many countries, the prices of medical products are subject to varying price control mechanisms as part of national health systems. In general, the prices of medicines under such systems are substantially lower than in the United States. Other countries allow companies to fix their own prices for medical products, but monitor and control company profits. Additional foreign price controls or other changes in pricing regulation could restrict the amount that we are able to charge for our product candidates. Accordingly, in markets outside the United States, the reimbursement for our products may be reduced compared with the United States and may be insufficient to generate commercially reasonable product revenues.

Moreover, increasing efforts by government and third-party payors in the United States and abroad to cap or reduce healthcare costs may cause such organizations to limit both coverage and the level of reimbursement for new products approved and, as a result, they may not cover or provide adequate payment for our product candidates. Net prices for drugs may be reduced by mandatory discounts or rebates required by government healthcare programs or private payors and by any future relaxation of laws that presently restrict imports of drugs from countries where they may be sold at lower prices than in the United States. Payors increasingly are considering new metrics as the basis for reimbursement rates, such as average sales price ("ASP"), average manufacturer price, and actual acquisition cost. The existing data for reimbursement based on some of these metrics is relatively limited, although certain states have begun to survey acquisition cost data for the purpose of setting Medicaid reimbursement rates, and CMS has begun making pharmacy National Average Drug Acquisition Cost and National Average Retail Price data publicly available on at least a monthly basis. Therefore, it may be difficult to project the impact of these evolving reimbursement metrics on the willingness of payors to cover candidate products that we or our partners are able to commercialize. In addition, many pharmaceutical manufacturers must calculate and report certain price reporting metrics to the government, such as ASP, and best price. Penalties may apply in some cases when such metrics are not submitted accurately and timely. Further, these prices for drugs may be reduced by mandatory discounts or rebates required by government healthcare programs. We expect to experience pricing pressures in connection with the sale of any of our product candidates due to the trend toward managed healthcare, the increasing influence of health maintenance organizations and additional legislative changes. The downward pressure on healthcare costs in general, particularly prescription drugs and surgical procedures and other treatments, has become intense. As a result, increasingly high barriers are being erected to the entry of new products such as ours.

Product liability lawsuits against us could cause us to incur substantial liabilities and could limit commercialization of any product candidates that we may develop.

We face an inherent risk of product liability exposure related to the testing of product candidates in human clinical trials and will face an even greater risk if we commercially sell any medicines that we may develop. If we cannot successfully defend ourselves against claims that our product candidates or medicines caused injuries, we could incur substantial liabilities. Regardless of merit or eventual outcome, liability claims may result in:

- decreased demand for any product candidates or medicines that we may develop;
- injury to our reputation and significant negative media attention;
- withdrawal of clinical trial participants;
- significant costs to defend the related litigation;
- substantial monetary awards to trial participants or patients;
- loss of revenue; and
- the inability to commercialize our product candidates.

Although we maintain insurance coverage for clinical trials that we sponsor, it may not be adequate to cover all liabilities that we may incur. We anticipate that we will need to increase our insurance coverage as we commence additional clinical trials and if we successfully commercialize any product candidates. The market for insurance coverage is increasingly expensive, and the costs of insurance coverage will increase as our clinical programs increase in size. We may not be able to maintain insurance coverage at a reasonable cost or in an amount adequate to satisfy any liability that may arise.

Risks Related to our Business and Industry

Business interruptions resulting from the COVID-19 outbreak or similar public health crises could cause a disruption of the development of our product candidates and adversely impact our business.

In December 2019, a novel strain of the coronavirus, COVID-19, was identified in Wuhan, China. This virus spread globally, including within the United States and in March 2020 the World Health Organization declared COVID-19 a pandemic. The pandemic and government measures taken in response have also had a significant impact, both direct and indirect, on businesses and commerce, as worker shortages have occurred; supply chains have been disrupted; facilities and production have been suspended; and demand for certain goods and services, such as medical services and supplies, has spiked, while demand for other goods and services, such as travel, has fallen. As a result of the ongoing COVID-19 pandemic, we have, and expect to continue to experience disruptions that could severely impact our business, preclinical studies and clinical trials, including:

- delays or difficulties in enrolling and retaining patients in our clinical trials;
- delays or difficulties in clinical site initiation, including difficulties in recruiting clinical site investigators and clinical site staff;
- delays in receiving authorizations from regulatory authorities to initiate our planned clinical trials;
- diversion of healthcare resources away from the conduct of clinical trials, including the diversion of hospitals serving as our clinical trial sites and hospital staff supporting the conduct of our clinical trials;
- interruption of key clinical trial activities, such as clinical trial site data monitoring, due to limitations on travel imposed or recommended by federal or state governments, employers and others or interruption of clinical trial subject visits and study procedures (such as endoscopies that are deemed non-essential), which may impact the integrity of subject data and clinical study endpoints;
- risk that participants enrolled in our clinical trials will contract COVID-19 while the clinical trial is ongoing, which could impact the results of the clinical trial, including by increasing the number of observed adverse events;
- risk that we are unable to enroll participants in our clinical trials in adequate numbers;
- interruption or delays in the operations of the FDA or other regulatory authorities, which may impact review and approval timelines;

- interruption of, or delays in receiving, supplies of our product candidates from our contract manufacturing organizations due to staffing shortages, production slowdowns or stoppages and disruptions in delivery systems;
- interruptions in preclinical studies due to restricted or limited operations at our laboratory facility;
- delays in necessary interactions with local regulators, ethics committees and other important agencies and contractors due to limitations in employee resources or forced furlough of government employees;
- changes in local regulations as part of a response to the COVID-19 pandemic, which may require us to change the ways in which our clinical trials are conducted, which may result in unexpected costs, or to discontinue such clinical trials altogether;
- limitations on employee resources that would otherwise be focused on the conduct of our preclinical studies and clinical trials, including because of sickness of employees or their families or the desire of employees to avoid contact with large groups of people; and
- interruption or delays to our sourced identification, discovery and clinical activities.

Since March 2020, when foreign and domestic inspections of facilities were largely placed on hold, the FDA has been working to resume routine surveillance, bioresearch monitoring and pre-approval inspections on a prioritized basis. Since April 2021, the FDA has conducted limited inspections and employed remote interactive evaluations, using risk management methods, to meet user fee commitments and goal dates. Ongoing travel restrictions and other uncertainties continue to impact oversight operations both domestic and abroad and it is unclear when standard operational levels will resume. The FDA is continuing to complete mission-critical work, prioritize other higher-tiered inspectional needs (e.g., for-cause inspections), and carry out surveillance inspections using risk-based approaches for evaluating public health. Should the FDA determine that an inspection is necessary for approval of a marketing application and an inspection cannot be completed during the review cycle due to restrictions on travel, the FDA has stated that it generally intends to issue, depending on the circumstances, a complete response letter or defer action on the application until an inspection can be completed. In 2020 and 2021, a number of companies announced receipt of complete response letters due to the FDA's inability to complete required inspections for their applications. Regulatory authorities outside the U.S. may adopt similar restrictions or other policy measures in response to the COVID-19 pandemic and may experience delays in their regulatory activities.

Additionally, as of May 26, 2021, the FDA noted it is continuing to ensure timely reviews of applications for medical products during the COVID-19 pandemic in line with its user fee performance goals. On July 16, 2020, FDA noted that it is continuing to expedite oncology product development with its staff teleworking full-time. However, FDA may not be able to continue its current pace and approval timelines could be extended, including where a pre-approval inspection or an inspection of clinical sites is required and due to the COVID-19 pandemic and travel restrictions FDA is unable to complete such required inspections during the review period.

The COVID-19 pandemic continues to rapidly evolve. The extent to which the pandemic impacts our business, preclinical studies and clinical trials will depend on future developments, which are highly uncertain and cannot be predicted with confidence, such as the ultimate geographic spread of the disease, the duration of the pandemic, travel restrictions and social distancing in the United States and other countries, business closures or business disruptions and the effectiveness of actions taken in the United States and other countries to contain and treat the disease.

Business interruptions resulting from the Russia-Ukraine war or similar geo-political conflicts could cause a disruption to our business activities including the development of our product candidates and the conduct of clinical trials thereby adversely impacting our business.

In February 2022, Russia launched an invasion in Ukraine. This conflict may impact our CROs, clinical data management organizations, and clinical investigators' ability to conduct certain of our trials in Eastern European countries, and may prevent us from obtaining data on patients already enrolled at sites in these countries. This could negatively impact the completion of our clinical trials and/or analyses of clinical results, which may increase our product development costs, elongate clinical trial timeframes and materially harm our business. Prior to the conflict, we had planned to utilize clinical trial sites in Russia and Ukraine as part of our Phase 3 pivotal study of lixivaptan for the treatment of ADPKD. We have now determined not to proceed with clinical sites in these countries and are in the process of identifying alternative sites to replace the sites previously identified in Russia and Ukraine.

Our future success depends on our ability to retain key employees, consultants and advisors and to attract, retain and motivate qualified personnel.

Our ability to compete in the highly competitive biotechnology and pharmaceutical industries depends upon our ability to attract and retain highly qualified managerial, scientific and medical personnel. We are highly dependent on our senior management, including scientific and medical personnel and other key employees. While we expect to engage in an orderly transition process as we integrate newly appointed officers and managers, we face a variety of risks and uncertainties relating to management transition, including diversion of management attention from business concerns, failure to retain other key personnel or loss of institutional knowledge. In addition, the loss of the services of any of our executive officers, other key employees and other scientific and medical advisors, and an inability to find suitable replacements could result in delays in product development and harm our business. In particular, due to our small number of employees, the loss of one employee may have a larger impact on our business than compared to a loss at one of our peers. We currently do not maintain "key person" insurance for any members of our management team.

Our Centessa Subsidiaries have historically conducted operations across facilities around the world. We may in the future expand our operations in the U.S. and other geographies, particularly in certain biotech hubs. Competition for skilled personnel in our market is intense and may limit our ability to hire and retain highly qualified personnel on acceptable terms or at all. Changes to immigration and work authorization laws and regulations, including those that restrain the flow of scientific and professional talent, can be significantly affected by political forces and levels of economic activity. Our business may be materially adversely affected if legislative or administrative changes to immigration or visa laws and regulations impair our hiring processes and goals or projects in the key jurisdictions in which we operate.

To encourage valuable employees to remain at our company, in addition to salary and cash incentives, we have provided equity awards that vest over time. The value to employees of equity awards that vest over time may be significantly affected by movements in our share price that are beyond our control, and may at any time be insufficient to counteract more lucrative offers from other companies. Despite our efforts to retain valuable employees, members of our management, scientific and development teams may terminate their employment with us at any time. Although we have employment agreements with our key employees, certain of these employment agreements provide for at-will employment, which means that any of our employees could leave our employment at any time. Our success also depends on our ability to continue to attract, retain and motivate highly skilled junior, mid-level and senior managers as well as junior, mid-level and senior scientific and medical personnel.

Additionally, we rely on our scientific founders and other scientific and clinical advisors and consultants to assist us in formulating our research, development and clinical strategies. Certain of our scientific founders, advisors and consultants are not our employees and may have commitments to, or consulting or advisory contracts with, other entities that may limit their availability to us. If a conflict of interest arises between their work for us and their work for another entity, we may lose their services. Furthermore, our advisors may have arrangements with other companies to assist those companies in developing products or technologies that may compete with ours. In particular, if we are unable to maintain consulting relationships with our scientific founders or if they provide services to our competitors, our development and commercialization efforts will be impaired and our business will be significantly harmed.

Our employees may engage in misconduct or other improper activities, including noncompliance with regulatory standards and requirements.

We are exposed to the risk of employee fraud or other misconduct. Misconduct by employees could include intentional failures to comply with FDA regulations, provide accurate information to the FDA, comply with manufacturing standards we may establish, comply with federal and state healthcare fraud and abuse laws and regulations, report financial information or data accurately or disclose unauthorized activities to us. In particular, sales, marketing and business arrangements in the healthcare industry are subject to extensive laws and regulations intended to prevent fraud, kickbacks, self-dealing and other abusive practices. These laws and regulations may restrict or prohibit a wide range of pricing, discounting, marketing and promotion, sales commission, customer incentive programs and other business arrangements. Employee misconduct could also involve the improper use of information obtained in the course of clinical trials, which could result in regulatory sanctions and serious harm to our reputation. It is not always possible to identify and deter employee misconduct, and the precautions we take to detect and prevent this activity may not be effective in controlling unknown or unmanaged risks or losses or in protecting us from governmental investigations or other actions or lawsuits stemming from a failure to be in compliance with such laws or regulations. If any such actions are instituted against us, and we are not successful in defending ourselves or asserting our rights, those actions could have a significant impact on our business, including the imposition of significant fines or other sanctions.

If we fail to comply with environmental, health and safety laws and regulations, we could become subject to fines or penalties or incur costs that could have a material adverse effect on the success of our business.

We are subject to numerous environmental, health and safety laws and regulations, including those governing laboratory procedures and the handling, use, storage, treatment and disposal of hazardous materials and wastes. Our operations involve the use of hazardous and flammable materials, including chemicals and biological materials. Our operations also produce hazardous waste products. We generally contract with third parties for the disposal of these materials and wastes. We cannot eliminate the risk of contamination or injury from these materials. In the event of contamination or injury resulting from our use of hazardous materials, we could be held liable for any resulting damages, and any liability could exceed our resources. We also could incur significant costs associated with civil or criminal fines and penalties for failure to comply with such laws and regulations.

In addition, we may incur substantial costs in order to comply with current or future environmental, health and safety laws and regulations. These current or future laws and regulations may impair our research, development or production efforts. Our failure to comply with these laws and regulations also may result in substantial fines, penalties or other sanctions.

Our internal computer systems, or those of our collaborators or other contractors or consultants, may fail or suffer security breaches, which could result in a material disruption of our product development programs.

In the ordinary course of our business, we may store, use, process or otherwise gain access to certain sensitive information, including proprietary information, confidential information, personal data and personal health data, intellectual property, trade secrets, and proprietary business information owned or controlled by ourselves or other parties. We may use third-party service providers and subprocessors to help us operate our business and we may also share such sensitive information with our partners or other third parties in conjunction with our business. We may be required to expend significant resources, at significant cost, fundamentally change our business activities and practices, or modify our operations, including our clinical trial activities, or information technology in an effort to protect against security breaches and to mitigate, detect, and remediate actual or potential vulnerabilities as well as security breaches. Our internal computer systems (including, without limitation, any relevant sensitive information and other assets stored therein or accessible thereby) and those of our current and any future collaborators, contractors or consultants are vulnerable to damage from computer viruses, bugs, unauthorized access, denial-of-service attacks (such as credential stuffing); ransomware attacks, user errors or malfeasance, natural disasters, terrorism, war and telecommunication and electrical failures. For example, Capella Biosciences was the victim of an attack in which an unrelated party hacked into the email of Capella Biosciences' Chief Executive Officer. In the past, a Centessa Subsidiary experienced unauthorized access to its systems through social engineering schemes. If any such material system failure, accident or security breach were to occur and cause interruptions in our operations, it could result in a material disruption of our development programs and our business operations, whether due to a loss of our trade secrets or other sensitive information or other similar disruptions, as well as necessitating that we incur significant costs to address such failure, accident or security breach. For example, the loss of clinical trial data from completed or future clinical trials could result in delays in our regulatory approval efforts and significantly increase our costs to recover or reproduce the data. In addition, failures or significant downtime of our information technology or telecommunication systems or those used by our third-party service providers could cause significant interruptions in our operations and adversely impact the confidentiality, integrity and availability of sensitive information. We may also be the subject of server malfunction, software or hardware failures, supply-chain cyber attacks, loss of data or other computer assets, and other similar issues. Due to the COVID-19 pandemic, a significant portion of our workforce works remotely that has increased the risk to our information technology assets and data.

To the extent that any disruption or security breach were to result in a loss of, or damage to, our data or applications, or inappropriate disclosure of sensitive information, we could incur liability, our competitive position could be harmed and the further development and commercialization of our product candidates could be delayed. Relevant laws, regulations, and industry standards, as well as contractual obligations, may require us to implement specific security measures or use industry-standard or reasonable measures to protect against security breaches. Even if we were to take and have taken security measures designed to protect against security breaches, there can be no assurance that such security measures or those of our service providers, partners and other third parties will be effective in protecting against disruptions or security breaches, or militating against the impact or the adverse consequences thereof. We may be unable to detect, anticipate, measure or prevent threats or techniques used to detect or exploit vulnerabilities in our (or our third parties') information technology, services, communications or software, or cause security breaches, because such threats and techniques change frequently, are often sophisticated in nature, and may not be detected until after an incident has occurred. We cannot be certain that we will be able to address any such vulnerabilities, in whole or part, and there may be delays in developing and deploying patches and other remedial measures to adequately address vulnerabilities. Relevant

laws, regulations, and industry standards, as well as contractual obligations, may also require us to notify relevant stakeholders (including affected individuals, partners, collaborators, customers, regulators, law enforcement agencies, credit reporting agencies and others) of security breaches, and such disclosures are costly and could also have a material adverse effect on our reputation, business, or financial condition.

Actual or perceived security breaches or vulnerabilities, lack of appropriate information security safeguards and concerns regarding data privacy or security may cause some of our actual or prospective customers, collaborators, partners and/or clinical trial participants to stop participating in our trials, using our products or working with us. Additionally, regulators could impose penalties and monetary fines against us for similar concerns. The discontinuance of relationships with third parties, or the failure to meet the expectations of such third parties, and/or regulatory investigation or enforcement, could result in material harm to our operations, financial performance or reputation and affect our ability to grow and operate our business. We cannot be sure that our insurance coverage, if any, will be adequate or otherwise protect us from or adequately mitigate liabilities arising out of such security breaches or vulnerabilities. The successful assertion of one or more large claims against us that exceeds our available insurance coverage, or results in changes to our insurance policies (including premium increases or the imposition of large excess or deductible or co-insurance requirements), could materially and adversely affect our business.

Unfavorable global economic conditions could adversely affect our business, financial condition or results of operations.

Our results of operations could be adversely affected by general conditions in the global economy and in the global financial markets. The most recent global financial crisis caused extreme volatility and disruptions in the capital and credit markets. A severe or prolonged economic downturn, such as the most recent global financial crisis, could result in a variety of risks to our business, including weakened demand for our product candidates and our ability to raise additional capital when needed on acceptable terms, if at all. A weak or declining economy could strain our suppliers, possibly resulting in supply disruption, or cause delays in payments for our services by third-party payors or our collaborators. Any of the foregoing could harm our business and we cannot anticipate all of the ways in which the current economic climate and financial market conditions could adversely impact our business.

Our international operations may expose us to business, regulatory, legal, political, operational, financial, pricing and reimbursement risks associated with doing business across multiple jurisdictions outside of the United States.

Our business is subject to risks associated with conducting business internationally. Our Centessa Subsidiaries, suppliers, industry partners and clinical study centers are located across Europe, the United States and certain other jurisdictions. Furthermore, our business strategy incorporates potential international expansion as we seek to obtain regulatory approval for, and commercialize, our product candidates in patient populations outside the United States. If approved, we may hire sales representatives and conduct physician and patient association outreach activities across multiple jurisdictions. Doing business internationally involves a number of risks, including but not limited to:

- multiple, conflicting and changing laws, regulations, and compliance requirements such as privacy regulations, tax laws and practice, export and import restrictions, employment laws, regulatory requirements, and other governmental approvals, permits and licenses;
- failure by us to obtain and maintain regulatory approvals for the use of our products in various countries;
- rejection or qualification of foreign clinical trial data by the competent authorities of other countries;
- additional potentially relevant third-party patent rights;
- complexities and difficulties in obtaining, maintaining, protecting and enforcing our intellectual property;
- difficulties in staffing and managing foreign operations;
- complexities associated with managing multiple payor reimbursement regimes, government payors or patient self-pay systems;
- limits in our ability to penetrate international markets;
- financial risks, such as longer payment cycles, difficulty collecting accounts receivable, the impact of local and regional financial crises on demand and payment for our products and exposure to foreign currency exchange rate fluctuations;

- natural disasters, political and economic instability, including wars, terrorism and political unrest, outbreak of disease, boycotts, curtailment of trade and other business restrictions;
- certain expenses including, among others, expenses for travel, translation and insurance; and
- regulatory and compliance risks that relate to anti-corruption compliance and record-keeping that may fall within the purview of the U.S. Foreign Corrupt Practices Act and/or the UK Bribery Act of 2010, or provisions of anti-corruption or anti-bribery laws in other countries.

Any of these factors could harm our future international expansion and operations and, consequently, our results of operations.

We may be subject, directly or indirectly, to federal and state healthcare fraud and abuse laws, false claims laws and health information privacy and security laws. If we are unable to comply, or have not fully complied, with such laws, we could face substantial penalties.

If we obtain FDA approval for any of our product candidates and begin commercializing those products in the United States, our operations will be directly, or indirectly through our prescribers, customers and purchasers, subject to various federal and state fraud and abuse laws and regulations, including, without limitation, the federal Health Care Program Anti-Kickback Statute, the federal civil and criminal False Claims Act and Physician Payments Sunshine Act and regulations. These laws will impact, among other things, our proposed sales, marketing and educational programs. In addition, we may be subject to patient privacy laws by both the federal government and the states in which we conduct our business. See section entitled "*Business – Government Regulation – Other United States Healthcare Laws."*

Because of the breadth of these laws and the narrowness of the statutory exceptions and safe harbors available, it is possible that some of our business activities could be subject to challenge under one or more of such laws. If our operations are found to be in violation of any of the laws described above or any other government regulations that apply to us, we may be subject to penalties, including civil and criminal penalties, damages, fines, exclusion from participation in government health care programs, such as Medicare and Medicaid, individual imprisonment and the curtailment or restructuring of our operations, any of which could adversely affect our ability to operate our business and our results of operations.

The provision of benefits or advantages to physicians to induce or encourage the prescription, recommendation, endorsement, purchase, supply, order or use of medicinal products is prohibited in the European Union. The provision of benefits or advantages to physicians is also governed by the national anti-bribery laws of European Union Member States, such as the UK Bribery Act 2010. Infringement of these laws could result in substantial fines and individual imprisonment.

Payments made to physicians in certain European Union Member States must be publicly disclosed. Moreover, agreements with physicians often must be the subject of prior notification and approval by the physician's employer, his or her competent professional organization and/or the regulatory authorities of the individual European Union Member States. These requirements are provided in the national laws, industry codes or professional codes of conduct, applicable in the European Union Member States. Failure to comply with these requirements could result in reputational risk, public reprimands, administrative penalties, fines or individual imprisonment.

For further information on privacy laws, regulations and standards, as well as policies, contracts and other obligations related to data privacy and security, and the potential application thereof to our operations (including in relation to our use of health-related personal data), see the sub-section immediately below this.

We are subject to stringent and changing privacy laws, regulations and standards as well as policies, contracts and other obligations related to data privacy and security. Our actual or perceived failure to comply with such obligations could lead to government enforcement actions (that could include fines and penalties), a disruption of our clinical trials or commercialization of our products, private litigation, harm to our reputation, or other adverse effects on our business or prospects.

The legislative and regulatory framework relating to the collection, use, retention, safeguarding, disclosure, sharing, transfer, security and other processing (collectively, "Process" or "Processing") of personal data (including health-related personal data) worldwide is rapidly evolving and is likely to remain uncertain for the foreseeable future. Globally, virtually every jurisdiction in which we operate has established its own data security and privacy frameworks with which we must comply and some of which may impose potentially conflicting obligations.

Accordingly, we are, or may become, subject to data privacy and security laws, regulations, and industry standards as well as policies, contracts and other obligations that apply to the Processing of personal data both by us and on our behalf (collectively, Data Protection Requirements). If we fail, or are perceived to have failed, to address or comply with Data Protection Requirements, this could result in government enforcement actions against us that could include investigations, fines, penalties, audits and inspections, additional reporting requirements and/or oversight, temporary or permanent bans on all or some Processing of personal data, orders to destroy or not use personal data, and imprisonment of company officials. Further, individuals or other relevant stakeholders could bring a variety of claims against us for our actual or perceived failure to comply with the Data Protection Requirements. Any of these events could have a material adverse effect on our reputation, business, or financial condition, and could lead to a loss of actual or prospective customers, collaborators or partners; interrupt or stop clinical trials; result in an inability to Process personal data or to operate in certain jurisdictions; limit our ability to develop or commercialize our products; or require us to revise or restructure our operations.

For example, in Europe, the collection and use of personal data, including health related data, is governed by the GDPR which came into effect on May 25, 2018 across the European Economic Area ("EEA"), and by related applicable data protection and privacy laws of the member states of the EEA. Switzerland has passed similar laws, and, following Brexit, the United Kingdom has transposed the GDPR into UK domestic law with effect from January 2021.

Collectively, European data protection laws (including the GDPR) are wide-ranging in scope and impose numerous, significant and complex compliance burdens in relation to the Processing of personal data, which increase our obligations with respect to clinical trials conducted in the EEA or the UK, such as: limiting permitted Processing of personal data to only that which is necessary for specified, explicit and legitimate purposes; requiring the establishment of a legal basis for Processing personal data; adopting a broad the definition of personal data to possibly include 'pseudonymized' or key-coded data; creating obligations for controllers and processors to appoint data protection officers in certain circumstances; imposing stringent transparency obligations to data subjects, which requires more detailed notices for clinical trial subjects and investigators; introducing the obligation to carry out data protection impact assessments in certain circumstances; establishing limitations on the collection and retention of personal data through 'data minimization' and 'storage limitation' principles; establishing obligations to implement 'privacy by design'; introducing obligations to honor increased rights for data subjects; formalizing a heightened and codified standard of data subject consent; establishing obligations to implement certain technical and organizational safeguards to protect the security and confidentiality of personal data; introducing obligations to agree to certain specific contractual terms and to take certain measures when working with third-party processors or joint controllers; imposing mandatory data breach notification requirements; and mandating the appointment of representatives in the UK and/or EU in certain circumstances. In particular, the Processing of "special category personal data" (such as personal data related to health and genetic information), which is relevant to our operations in the context of our conduct of clinical trials, imposes heightened compliance burdens under European data protection laws and is a topic of active interest among relevant regulators.

In addition, the GDPR provides that EEA member states may introduce specific or additional requirements related to the Processing of special categories of personal data such as health data that we may process in connection with clinical trials or otherwise. In the UK, the UK Data Protection Act 2018 complements the UK GDPR in this regard. This fact may lead to greater divergence on the law that applies to the Processing of such personal data across the EEA and/or UK, which may increase our costs and overall compliance risk. Such country-specific regulations could also limit our ability to Process relevant personal data in the context of our EEA and/or UK operations ultimately having an adverse impact on our business, and harming our business and financial condition.

Further, certain European data protection laws restrict transfers of personal data to countries outside Europe that do not ensure an adequate level of protection, like the United States (so-called "third countries"). These transfers are prohibited unless an appropriate safeguard specified by the European data protection laws is implemented, such as the Standard Contractual Clauses ("SCCs") approved by the European Commission, or a derogation applies. The Court of Justice of the European Union ("CJEU") in its decision in Case C-311/18 (*Data Protection Commissioner v Facebook Ireland and Maximillian Schrems* or *Schrems II*) deemed that the SCCs are valid. However, the CJEU ruled that transfers made pursuant to the SCCs and other alternative transfer mechanisms need to be assessed on a case-by-case basis taking into account the legal regime applicable in the destination country, in particular regarding applicable surveillance laws and relevant rights of individuals with respect to the transferred personal data, to ensure an "essentially equivalent" level of protection to that guaranteed in the EEA in the jurisdiction where the data importer is based. On June 4, 2021, the European Commission published new versions of the SCCs ("New SCCs"), which seek to address the issues identified by the CJEU's *Schrems II* decision and provide further details regarding the transfer assessments of the importer third country's laws that the parties are required to conduct when implementing the New SCCs. On June 18, 2021, the European

Data Protection Board ("EDPB") issued its final guidance following the CJEU's decision that imposes significant new diligence requirements on transferring data outside the EEA, including under an approved transfer mechanism. This guidance requires an "essential equivalency" assessment of the laws of the destination country transferred. If the "essentially equivalent" level of protection standard outlined by the CJEU's decision is not satisfied in the destination country, the exporting entity must then assess if supplementary technical, organizational and/or contractual measures can be put in place that, in combination with the chosen transfer mechanism, would address the deficiency in the laws and ensure that essentially equivalent protection can be given to the data. Complying with this guidance will be expensive and time consuming and may ultimately prevent us from transferring personal data outside the EEA, which would cause significant business disruption. At present, there are few, if any, viable alternatives to the SCCs. The risks associated with such exports of personal data from locations within Europe are particularly relevant to our business as our group comprises several operating entities, many of which are located, and/or sponsor clinical trials, in Europe. We have yet to adopt and implement comprehensive processes, systems and other relevant measures within our organization, and/or with our relevant collaborators, service providers, contractors or consultants, which are appropriate to address relevant requirements relating to international transfers of personal data from Europe, and to minimize the potential impacts and risks resulting from those requirements, across our organization. Failure to implement valid mechanisms for personal data transfers from Europe may result in our facing increased exposure to regulatory actions, substantial fines and injunctions against Processing personal data from Europe. Inability to export personal data may also: restrict our activities outside Europe; limit our ability to collaborate with partners as well as other service providers, contractors and other companies outside of Europe; and/or require us to increase our Processing capabilities within Europe at significant expense or otherwise cause us to change the geographical location or segregation of our relevant systems and operations – any or all of which could adversely affect our operations or financial results. Additionally, other countries outside of Europe have enacted or are considering enacting similar cross-border data transfer restrictions and laws requiring local data residency, which could increase the cost and complexity of delivering our services and operating our business. The type of challenges we face in Europe will likely also arise in other jurisdictions that adopt laws similar in construction to the GDPR or regulatory frameworks of equivalent complexity.

European data protection laws also provide for robust regulatory enforcement and significant penalties for noncompliance, including, for example, under the GDPR, fines of up to €20 million or 4% of global annual revenue of any noncompliant organization for the preceding financial year, whichever is higher. In addition to administrative fines, a wide variety of other potential enforcement powers are available to competent supervisory authorities in respect of potential and suspected violations of the GDPR, including extensive audit and inspection rights, and powers to order temporary or permanent bans on all or some Processing of personal data carried out by noncompliant businesses – including permitting authorities to require destruction of improperly gathered or used personal data. European supervisory authorities have shown a willingness to impose significant fines and issue orders preventing the processing of personal data on non-compliant businesses. The GDPR also confers a private right of action on data subjects and non-profit associations to lodge complaints with supervisory authorities, seek judicial remedies, and obtain compensation for damages resulting from violations of the GDPR. As noted above, the legality of transfers of personal data to the United States and other third countries is a subject of particular uncertainty and we expect increased enforcement activity from the supervisory authorities with respect to such transfers.

Further, the UK's decision to leave the EU, often referred to as Brexit, and ongoing developments in the UK have created uncertainty regarding data protection regulation in the UK. As noted above, the data protection obligations of the GDPR continue to apply to UK-related Processing of personal data in substantially unvaried form under the so-called 'UK GDPR' (i.e., the GDPR as it continues to form part of UK law by virtue of section 3 of the EU (Withdrawal) Act 2018, as amended). However, going forward, there is increasing risk for divergence in application, interpretation and enforcement of the data protection laws as between the UK and EEA. In September 2021, the UK Government announced a consultation on reforms to the UK data protection regime. This consultation may result in changes to the UK GDPR that affect our efforts to create a harmonized approach to processing European personal data and potentially exposes us to two parallel regimes where the UK GDPR and EU GDPR both apply, each of which potentially authorizes similar fines and other potentially divergent enforcement actions for certain violations. Any changes introduced by the UK Government may also be considered by the European Commission to undermine the UK data protection regime and therefore lead to the revocation of adequacy finding granted to the United Kingdom to enable personal data to transfer from the EU to the UK. Additionally, following the expiry of the post-Brexit transitional arrangements, the UK Information Commissioner's Office is not able to be our 'lead supervisory authority' in respect of any 'cross border Processing' for the purposes of the GDPR. For so long as we are unable to, and/or do not, designate a lead supervisory authority in an EEA member state, with effect from January 1, 2021, we are not able to benefit from the GDPR's 'one stop shop' mechanism. Amongst other things, this would mean that, in the event of a violation of the GDPR affecting data subjects across the UK and the EEA, we could be

investigated by, and ultimately fined by, the UK Information Commissioner's Office and the supervisory authority in each and every EEA member state where data subjects have been affected by such violation.

In the United States, there are a broad variety of data protection laws and regulations that may apply to our activities such as state data breach notification laws, state personal data privacy laws (for example, the CCPA), state health information privacy laws, and federal and state consumer protection laws. A range of enforcement agencies exist at both the state and federal levels that can enforce these laws and regulations. For example, the CCPA requires covered businesses that process personal information of California residents to disclose their data collection, use and sharing practices. Further, the CCPA provides California residents with new data privacy rights (including the ability to opt out of certain disclosures of personal data), imposes new operational requirements for covered businesses, provides for civil penalties for violations as well as a private right of action for data breaches and statutory damages (that is expected to increase data breach class action litigation and result in significant exposure to costly legal judgements and settlements). Aspects of the CCPA and its interpretation and enforcement remain uncertain. In addition, it is anticipated that the CCPA will be expanded on January 1, 2023, when the California Privacy Rights Act of 2020 ("CPRA") becomes operative. The CPRA will, among other things, give California residents the ability to limit use of certain sensitive personal information, further restrict the use of cross-contextual advertising, establish restrictions on the retention of personal information, expand the types of data breaches subject to the CCPA's private right of action, provide for increased penalties for CPRA violations concerning California residents under the age of 16, and establish a new California Privacy Protection Agency to implement and enforce the new. Although there are limited exemptions for clinical trial data and information subject to HIPAA under the CCPA, the CCPA and other similar laws could impact our business activities depending on how it is interpreted.

Certain other state laws impose similar privacy obligations and we also expect anticipate that more states to may enact legislation similar to the CCPA, which provides consumers with new privacy rights and increases the privacy and security obligations of entities handling certain personal information of such consumers. The CCPA has prompted a number of proposals for new federal and state-level privacy legislation. Such proposed legislation, if enacted, may add additional complexity, variation in requirements, restrictions and potential legal risk, require additional investment of resources in compliance programs, impact strategies and the availability of previously useful data and could result in increased compliance costs and/or changes in business practices and policies.

On March 2, 2021, for example, Virginia enacted the Consumer Data Protection Act (the "CDPA"). The CDPA will become effective January 1, 2023. The CDPA will regulate how businesses (which the CDPA refers to as "controllers") collect and share personal information. While the CDPA incorporates many similar concepts of the CCPA and CPRA, there are also several key differences in the scope, application, and enforcement of the law that will change the operational practices of controllers. The new law will impact how controllers collect and process personal sensitive data, conduct data protection assessments, transfer personal data to affiliates, and respond to consumer rights requests.

Also, on July 8, 2021, Colorado's governor signed the Colorado Privacy Act ("CPA"), into law. The CPA is rather similar to the Virginia's CPDA but also contains additional requirements. The new measure applies to companies conducting business in Colorado or who produce or deliver commercial products or services intentionally targeted to its residents of the state that either: (1) control or process the personal data of at least 100,000 consumers during a calendar year; or (2) derive revenue or receive a discount on the price of goods or services from the sale of personal data and process or control the personal data of at least 25,000 consumers. With the CPA, Colorado became the third state to enact a comprehensive privacy law but it is quite possible that other states will follow suit. The existence of comprehensive privacy laws in different states in the country will make our compliance obligations more complex and costly and may increase the likelihood that we may be subject to enforcement actions or otherwise incur liability for noncompliance.

In other foreign jurisdictions in which we operate or have operated (including sponsoring past, present or future clinical trials), such as, without limitation, Canada and Georgia, we may also be subject to stringent Data Protection Requirements. In Canada, for instance, Quebec just passed a comprehensive new data protection law that will have far-reaching effects.

Generally, these laws exemplify the vulnerability of our business to the evolving regulatory environment related to personal data and may require us to modify our Processing practices at substantial costs and expenses in an effort to comply.

Additionally, regulations promulgated pursuant to HIPAA, as amended, establish privacy and security standards that limit the use and disclosure of individually identifiable health information, or protected health information, and require the implementation of administrative, physical and technological safeguards designed to protect the privacy,

confidentiality, integrity and availability of protected health information. These provisions may be applicable to our business or that of our collaborators, service providers, contractors or consultants.

Determining whether protected health information has been handled in compliance with applicable Data Protection Requirements can be complex and may be subject to changing interpretation. If we are unable to properly protect the privacy and security of protected health information, we could be found to have violated these privacy and security laws and/or breached certain contracts with our business partners (including as a business associate). Further, if we fail to comply with applicable Data Protection Requirements, such as, to the extent applicable, HIPAA privacy and security standards, we could face significant civil and criminal penalties. In the United States, the Department of Health and Human Services' and state attorneys general enforcement activity can result in financial liability and reputational harm, and responses to such enforcement activity can consume significant internal resources. In addition, state attorneys general are authorized to bring civil actions seeking either injunctions or damages in response to violations that threaten the privacy of state residents. We cannot be sure how these regulations will be interpreted, enforced or applied to our operations. In addition to the risks associated with enforcement activities and potential contractual liabilities, our ongoing efforts to comply with evolving laws and regulations at the federal and state level may be costly and require ongoing modifications to our policies, procedures and systems.

Given the breadth and evolving nature of Data Protection Requirements, preparing for and complying with these requirements is rigorous, time-intensive and requires significant resources and a review of our technologies, systems and practices, as well as those of any third-party collaborators, service providers, contractors or consultants that Process personal data on our behalf.

We may publish privacy policies and other documentation regarding our Processing of personal data and/or other confidential, proprietary or sensitive information. Although we endeavor to comply with our published policies and other documentation, we may at times fail to do so or may be perceived to have failed to do so. Moreover, despite our efforts, we may not be successful in achieving compliance if our employees, third-party collaborators, service providers, contractors or consultants fail to comply with our policies and documentation. Such failures can subject us to potential foreign, local, state and federal action if they are found to be deceptive, unfair, or misrepresentative of our actual practices. Moreover, subjects about whom we or our partners obtain information, as well as the providers who share this information with us, may contractually limit our ability to use and disclose the information. Claims that we have violated individuals' privacy rights or failed to comply with data protection laws or applicable privacy notices even if we are not found liable, could be expensive and time-consuming to defend and could result in adverse publicity that could harm our business or otherwise materially and negatively impact our business.

We are subject to U.S. and certain foreign export and import controls, sanctions, embargoes, anti-corruption laws, and anti-money laundering laws and regulations. Compliance with these legal standards could impair our ability to compete in domestic and international markets. We can face criminal liability and other serious consequences for violations, which can harm our business.

We are subject to export control and import laws and regulations, including the U.S. Export Administration Regulations, U.S. Customs regulations, various economic and trade sanctions regulations administered by the U.S. Treasury Department's Office of Foreign Assets Controls, the U.S. Foreign Corrupt Practices Act of 1977, as amended, the U.S. domestic bribery statute contained in 18 U.S.C. § 201, the U.S. Travel Act, the USA PATRIOT Act, and other state and national anti-bribery and anti-money laundering laws in the countries in which we conduct activities. Anti-corruption laws are interpreted broadly and prohibit companies and their employees, agents, contractors, and other collaborators from authorizing, promising, offering, or providing, directly or indirectly, improper payments or anything else of value to recipients in the public or private sector. We may engage third parties to sell our products outside the United States, to conduct clinical trials, and/or to obtain necessary permits, licenses, patent registrations, and other regulatory approvals. We have direct or indirect interactions with officials and employees of government agencies or government-affiliated hospitals, universities, and other organizations. We can be held liable for the corrupt or other illegal activities of our employees, agents, contractors, and other collaborators, even if we do not explicitly authorize or have actual knowledge of such activities. Any violations of the laws and regulations described above may result in substantial civil and criminal fines and penalties, imprisonment, the loss of export or import privileges, debarment, tax reassessments, breach of contract and fraud litigation, reputational harm, and other consequences.

We are comprised of multiple portfolio operating entities, all of which are at differing stages in their commercial, clinical, and preclinical operations, and all of which have taken differing measures to comply (and have varying degrees of compliance) with Data Protection Requirements. The lack of uniformity in the portfolio operating entities' efforts to

comply with Data Protection Requirements, including, without limitation, establishing appropriate information security measures, could materially and adversely affect our business.

We are comprised of multiple portfolio operating entities, many of which were previously unrelated to the others and have operated discretely. Accordingly, the particular application of Data Protection Requirements may vary significantly across our group; as may the approach adopted by, and success of, relevant members of our organization to comply with relevant Data Protection Requirements. We have yet to adopt a harmonized approach to compliance with Data Protection Requirements across our group. The design, implementation, consolidation and harmonization of Processing operations, and relevant systems and facilities, across our company may cause us to incur significant expense, even where relevant members of the group are located within the same jurisdictions. These efforts could adversely affect our financial results.

Furthermore, the risks resulting from potential failure to comply, or perception of failure to comply, with Data Protection Requirements may vary significantly across our group.

Our company results from the combination of multiple early-stage operating companies within the life sciences sector. As early-stage companies, many of our operating companies are not at a level of maturity in relation to efforts to achieve compliance with Data Protection Requirements and the structuring of Processing operations, which would ordinarily be expected of an operating company that is a subsidiary of a publicly-traded company. Consequently, there exists a high level of risk with respect to one or more such companies as a result of its or their failure to comply, or perception of failure to comply, with Data Protection Requirements.

Risks Related to Ownership of Our Securities

We are an emerging growth company and a smaller reporting company, and we cannot be certain if the reduced reporting requirements applicable to emerging growth companies and smaller reporting companies will make our ADSs less attractive to investors.

We are an emerging growth company, as defined in the Jumpstart Our Business Startups Act ("JOBS Act"), enacted in April 2012. For as long as we continue to be an emerging growth company, we may take advantage of exemptions from various reporting requirements that are applicable to other public companies that are not emerging growth companies, including not being required to comply with the auditor attestation requirements of Section 404 of the Sarbanes-Oxley Act of 2002, as amended ("Sarbanes-Oxley Act"), reduced disclosure obligations regarding executive compensation our periodic reports and proxy statements, and exemptions from the requirements of holding nonbinding advisory votes on executive compensation and shareholder approval of any golden parachute payments not previously approved. We could be an emerging growth company for up to five years following 2021, the year in which we completed our initial public offering, although circumstances could cause us to lose that status earlier. We will remain an emerging growth company until the earlier of (1) the last day of the fiscal year (a) following the fifth anniversary of the closing of our initial public offering, (b) in which we have total annual gross revenue of at least $1.07 billion or (c) in which we are deemed to be a large accelerated filer, which requires the market value of our ordinary shares that is held by non-affiliates to exceed $700 million as of the prior June 30th after we have been subject to the SEC's periodic reporting requirements for at least twelve calendar months and have filed at least one annual report, and (2) the date on which we have issued more than $1 billion in non-convertible debt during the prior three-year period.

Under the JOBS Act, emerging growth companies can also delay adopting new or revised accounting standards until such time as those standards apply to private companies. We have elected to not "opt out" of this exemption from complying with new or revised accounting standards and, therefore, we will adopt new or revised accounting standards at the time private companies adopt the new or revised accounting standard and will do so until such time that we either (i) irrevocably elect to "opt out" of such extended transition period or (ii) no longer qualify as an emerging growth company.

We cannot predict if investors will find our ADSs less attractive because we may rely on these exemptions. If some investors find our ADSs less attractive as a result, there may be a less active trading market for our ADSs and our ADS price may be more volatile.

Our articles of association provide that the courts of England and Wales will be the exclusive forum for the resolution of all shareholder complaints other than complaints asserting a cause of action arising under the Securities Act or the Exchange Act, and that the United States District Court for the Southern District of New York will be the exclusive

forum for the resolution of any shareholder complaint asserting a cause of action arising under the Securities Act or the Exchange Act.

Our articles of association provide that, unless we consent by ordinary resolution to the selection of an alternative forum, the courts of England and Wales shall, to the fullest extent permitted by law, be the exclusive forum for: (a) any derivative action or proceeding brought on our behalf; (b) any action or proceeding asserting a claim of breach of fiduciary duty owed by any of our directors, officers or other employees to us; (c) any action or proceeding asserting a claim arising out of any provision of the Companies Act 2006 ("Companies Act"), or our articles of association (as may be amended from time to time); or (d) any action or proceeding asserting a claim or otherwise related to our affairs, or the England and Wales Forum Provision. The England and Wales Forum Provision will not apply to any causes of action arising under the Securities Act or the Exchange Act. Our articles of association will further provide that unless we consent by ordinary resolution to the selection of an alternative forum, the United States District Courts shall be the exclusive forum for resolving any complaint asserting a cause of action arising under the Securities Act or the Exchange Act, or the U.S. Federal Forum Provision. In addition, our articles of association will provide that any person or entity purchasing or otherwise acquiring any interest in our shares is deemed to have notice of and consented to the England and Wales Forum Provision and the U.S. Federal Forum Provision; provided, however, that our shareholders cannot and will not be deemed to have waived our compliance with the U.S. federal securities laws and the rules and regulations thereunder.

The England and Wales Forum Provision and the U.S. Federal Forum Provision in our articles of association may impose additional litigation costs on our shareholders in pursuing any such claims. Additionally, the forum selection clauses in our articles of association may limit the ability of our shareholders to bring a claim in a judicial forum that they find favorable for disputes with us or our directors, officers or employees, which may discourage the filing of lawsuits against us and our directors, officers and employees, even though an action, if successful, might benefit our shareholders. In addition, while the Delaware Supreme Court ruled in March 2020 that federal forum selection provisions purporting to require claims under the Securities Act be brought in federal court are "facially valid" under Delaware law, there is uncertainty as to whether other courts, including the courts of England and Wales and other courts within the U.S., will enforce our U.S. Federal Forum Provision. If the U.S. Federal Forum Provision is found to be inapplicable or unenforceable in an action, we may incur additional costs associated with resolving such action in other jurisdictions, which could adversely affect our results of operations and financial condition. The U.S. Federal Forum Provision may also impose additional litigation costs on our shareholders who assert that the provision is not enforceable or invalid. The courts of England and Wales and the United States District Court for the Southern District of New York may also reach different judgments or results than would other courts, including courts where a shareholder considering an action may be located or would otherwise choose to bring the action, and such judgments may be more or less favorable to us than our shareholders.

The price of our ADSs may be volatile, and you could lose all or part of your investment.

The trading price of our ADSs is likely to be highly volatile and could be subject to wide fluctuations in response to various factors, some of which are beyond our control, including limited trading volume. In addition to the factors discussed in this "Risk Factors" section, these factors include:

- the results of our ongoing, planned or any future preclinical studies, clinical trials or clinical development programs;
- the commencement, enrollment, or results of clinical trials of our product candidates or any future clinical trials we may conduct, or changes in the development status of our product candidates;
- adverse results or delays in preclinical studies and clinical trials;
- our decision to initiate a clinical trial, not to initiate a clinical trial, or to terminate an existing clinical trial;
- any delay in our regulatory filings or any adverse regulatory decisions, including failure to receive regulatory approval of our product candidates;
- changes in laws or regulations applicable to our products, including but not limited to clinical trial requirements for approvals;
- adverse developments concerning our manufacturers or our manufacturing plans;
- our inability to obtain adequate product supply for any licensed product or inability to do so at acceptable prices;
- our inability to establish collaborations if needed;
- our failure to commercialize our product candidates;

- changes in the structure of healthcare payment systems;
- additions or departures of key scientific or management personnel;
- unanticipated serious safety concerns related to the use of our product candidates;
- introduction of new products or services offered by us or our competitors;
- announcements of significant acquisitions, strategic partnerships, joint ventures or capital commitments by us or our competitors;
- our ability to effectively manage our growth;
- the size and growth of our initial cancer target markets;
- our ability to successfully treat additional types of cancers or at different stages;
- actual or anticipated variations in quarterly operating results;
- our cash position;
- our failure to meet the estimates and projections of the investment community or that we may otherwise provide to the public;
- publication of research reports about us or our industry, or immunotherapy in particular, or positive or negative recommendations or withdrawal of research coverage by securities analysts;
- changes in the market valuations of similar companies;
- overall performance of the equity markets;
- sales of our ADSs by us or holders of our ADSs in the future;
- trading volume of our ADSs;
- changes in accounting practices;
- ineffectiveness of our internal controls;
- disputes or other developments relating to intellectual property or proprietary rights, including patents, litigation matters and our ability to obtain patent protection for our technologies;
- significant lawsuits, including intellectual property or shareholder litigation;
- general political and economic conditions; and
- other events or factors, many of which are beyond our control.

In addition, the stock market in general, and the market for biopharmaceutical companies in particular, have experienced extreme price and volume fluctuations that have often been unrelated or disproportionate to the operating performance of these companies. Broad market and industry factors may negatively affect the market price of our ADSs, regardless of our actual operating performance. If the market price of our ADSs does not exceed the price at which you purchased them, you may not realize any return on your investment in us and may lose some or all of your investment. In the past, securities class action litigation has often been instituted against companies following periods of volatility in the market price of a company's securities. This type of litigation, if instituted, could result in substantial costs and a diversion of management's attention and resources, which would harm our business, financial condition, results of operation and future prospects.

Sales of a substantial number of securities by shareholders in the public market could cause our ADS price to fall.

If our shareholders sell, or indicate an intention to sell, substantial amounts of our ADSs in the public market after the lockup and other legal restrictions on resale lapse, the trading price of our ADSs could decline. For example, ordinary shares that are either subject to outstanding options or reserved for future issuance under equity incentive plans will become eligible for sale in the public market to the extent permitted by the provisions of various vesting schedules, the lock-up agreements and Rule 144 and Rule 701 under the Securities Act of 1933, as amended, or the Securities Act. If these additional ordinary shares are sold, or if it is perceived that they will be sold, in the public market, the trading price of our ADSs could decline.

As of December 31, 2021, the holders of 49,197,753 ordinary shares (or ordinary shares converted to ADSs) are entitled to rights with respect to the registration of their shares under the Securities Act. Registration of these shares under the Securities Act would result in such shares becoming freely tradable without restriction under the Securities Act, except for shares held by affiliates, as defined in Rule 144 under the Securities Act. Any sales of securities by these shareholders could have a material adverse effect on the trading price of our ADSs.

We do not know whether an active, liquid and orderly trading market will develop for our ADSs or what the market price of our ADSs will be and, as a result, it may be difficult for you to sell your ADSs.

Although our ADSs are listed on The Nasdaq Global Select Market, an active trading market for our ADSs may never develop or be sustained. You may not be able to sell your ADSs quickly or at the market price if trading in shares of our ADSs is not active. As a result of these and other factors, you may be unable to resell your ADSs at or above the price at which your purchased them. Further, an inactive market may also impair our ability to raise capital by selling additional ADSs and may impair our ability to enter into strategic partnerships or acquire companies or products by using our ADSs as consideration.

If securities or industry analysts do not maintain research coverage of our company or publish inaccurate or unfavorable research about our business, the price of our ADSs and trading volume could decline.

The trading market for our ADSs will depend in part on the research and reports that securities or industry analysts publish about us or our business. If one or more of the analysts who cover us downgrades our ADSs or publishes inaccurate or unfavorable research about our business, our ADS price may decline. If one or more of these analysts ceases coverage of our company or fails to publish reports on us regularly, demand for our ADSs could decrease, which might cause our ADS price and trading volume to decline.

Our principal shareholders and management own a significant percentage of our voting shares and will be able to exert significant influence over matters subject to shareholders' approval.

Our executive officers, directors, and 5.0% shareholders beneficially owned approximately 47.4% of our voting shares as of December 31, 2021. Therefore, these shareholders will have the ability to influence us through this ownership position. These shareholders may be able to determine matters requiring shareholder approval. For example, these shareholders may be able to control elections, re-elections and removal of directors, amendments of our articles of association, or approval of any merger, scheme of arrangement, sale of assets, or other major corporate transaction. This may prevent or discourage unsolicited acquisition proposals or offers for our ADSs that you may feel are in your best interest as a holder of our ADSs.

In addition, some of these persons or entities may have interests different than yours. For example, because many of these shareholders purchased their ordinary shares at prices substantially below the price at which you may have purchased our ADSs and have held their ordinary shares for a longer period, they may be more interested in selling our company to an acquirer than other investors or they may want us to pursue strategies that deviate from the interests of other shareholders.

Future sales and issuances of our ADSs or rights to purchase ordinary shares, including pursuant to our equity incentive plans, could result in additional dilution of the percentage ownership of our shareholders and could cause the price of our ADSs to fall.

We expect that significant additional capital may be needed in the future to continue our planned operations, including conducting clinical trials, expanded research and development activities, and costs associated with operating as a public company. To raise capital, we may sell ADSs, ordinary shares, convertible securities, or other equity securities in one or more transactions at prices and in a manner we determine from time to time. If we sell ADSs, ordinary shares, convertible securities, or other equity securities, investors may be materially diluted by subsequent sales, and new investors could gain rights, preferences, and privileges senior to the holders of our ADSs. Pursuant to our 2021 Plan, our management is authorized to grant share options to our employees, directors, and consultants.

As of December 31, 2021, the aggregate number of ordinary shares that may be issued pursuant to future share awards under the 2021 Plan is 6,949,243 ordinary shares. The number of ordinary shares reserved for issuance under the 2021 Plan shall be cumulatively increased on January 1, 2022 and each January 1 thereafter by up to 5.0% of the total number of ordinary shares outstanding on December 31 of the preceding calendar year or a lesser number of ordinary

shares determined by our board of directors. Unless our board of directors elects not to increase the number of ordinary shares available for future grant each year, our shareholders may experience additional dilution, which could cause the price of our ADSs to fall.

We have broad discretion in the use of our cash resources and may not use them effectively.

Our management will have broad discretion in the application of our cash resources, and you will not have the opportunity as part of your investment decision to assess whether such resources are being used appropriately. Because of the number and variability of factors that will determine our use of our cash resources, their ultimate use may vary substantially from their currently intended use. Our management might not apply our cash resources in ways that ultimately increase or maintain the value of your investment. Pending their use, we may invest our cash resources in short-term, investment-grade, interest-bearing securities. These investments may not yield a favorable return to our shareholders.

We do not intend to pay dividends on our ordinary shares, so any returns will be limited to the value of our ordinary shares or ADSs.

We currently anticipate that we will retain future earnings for the development, operation, and expansion of our business and do not anticipate declaring or paying any cash dividends for the foreseeable future. In addition, we may enter into agreements that prohibit us from paying cash dividends without prior written consent from our contracting parties, or which other terms prohibiting or limiting the amount of dividends that may be declared or paid on our ADS. Furthermore, under the Companies Act, a company's accumulated realized profits, so far as not previously utilized by distribution or capitalization, must exceed its accumulated realized losses so far as not previously written off in a reduction or reorganization of capital duly made (on a non-consolidated basis), before dividends can be paid. In the future, were our dividend policy to change, a dividend or distribution may still be restricted from being declared and paid. In addition, under the Companies Act, a public company can only affect a buyback of shares out of distributable profits or a fresh issue of shares and cannot do so out of capital. For these reasons, any return to shareholders may therefore be limited to the appreciation of their shares, which may never occur.

As a public company, we may be at an increased risk of securities class action litigation, which is expensive and could divert management attention.

The market price of our securities may be volatile and, in the past, companies that have experienced volatility in the market price of their stock have been subject to securities class action litigation. Historically, securities class action litigation has often been brought against a company following a decline in the market price of its securities. This risk is especially relevant for us because biotechnology and pharmaceutical companies have experienced significant share price volatility in recent years. If we were to be sued, it could result in substantial costs and a diversion of management's attention and resources, which could harm our business.

We will incur significant increased costs as a result of operating as a public company, and our management will be required to devote substantial time to new compliance initiatives.

As a newly public company, we will incur significant legal, accounting, and other expenses that we had not historically incurred as a private company. We are subject to the reporting requirements of the Securities Exchange Act of 1934, as amended, or the Exchange Act, which will require, among other things, that we file with the Securities and Exchange Commission (SEC), annual, quarterly, and current reports with respect to our business and financial condition. In addition, the Sarbanes-Oxley Act, as well as rules subsequently adopted by the SEC and The Nasdaq Global Select Market to implement provisions of the Sarbanes-Oxley Act, impose significant requirements on public companies, including requiring establishment and maintenance of effective disclosure and financial controls and changes in corporate governance practices. Further, in July 2010, the Dodd-Frank Wall Street Reform and Consumer Protection Act (the Dodd-Frank Act), was enacted. There are significant corporate governance and executive compensation related provisions in the Dodd-Frank Act that require the SEC to adopt additional rules and regulations in these areas, such as "say on pay" and proxy access. Recent legislation permits emerging growth companies to implement many of these requirements over a longer period and up to five years from the pricing of our initial public offering. We intend to take advantage of this new legislation but cannot guarantee that we will not be required to implement these requirements sooner than budgeted or planned and thereby incur unexpected expenses. Shareholder activism, the current political environment, and the current high level of government intervention and regulatory reform may lead to substantial new regulations and disclosure obligations, which may lead to additional compliance costs and impact the manner in which we operate our business in ways we cannot currently anticipate.

We expect the rules and regulations applicable to public companies to substantially increase our legal and financial compliance costs and to make some activities more time-consuming and costly. If these requirements divert the attention of our management and personnel from other business concerns, they could have a material adverse effect on our business, financial condition, and results of operations. The increased costs will decrease our net income or increase our net loss and may require us to reduce costs in other areas of our business or increase the prices of our products or services. For example, we expect these rules and regulations to make it more difficult and more expensive for us to obtain director and officer liability insurance and we may be required to incur substantial costs to maintain the same or similar coverage. We cannot predict or estimate the amount or timing of additional costs we may incur to respond to these requirements. The impact of these requirements could also make it more difficult for us to attract and retain qualified persons to serve on our board of directors, our board committees, or as executive officers.

We had material weaknesses in our internal control systems over financial reporting, which have been remediated; however we may identify additional or new material weaknesses in the future that may cause us to fail to meet our reporting obligations, result in material misstatements in our financial statements or fail to prevent fraud. We will need to continue to invest time and resources in the design, implementation and maintenance of controls.

Our management is responsible for establishing and maintaining internal control over financial reporting, disclosure controls, and compliance with the other requirements of the Sarbanes-Oxley Act and the rules promulgated by the SEC thereunder. Internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements in accordance with international financial reporting standards. A material weakness is a deficiency, or combination of deficiencies, in internal control over financial reporting, such that there is a reasonable possibility that a material misstatement of the financial statements will not be prevented or detected on a timely basis.

In connection with the audits of our financial statements as of December 31, 2020 and for the period from October 26, 2020 (inception) through December 31, 2020 and in connection with audits of our Centessa Subsidiaries as of December 31, 2019 and 2020 for the periods or years ended December 31, 2019 and 2020, we identified material weaknesses in our internal control over financial reporting. Neither Centessa nor the Centessa Subsidiaries had a sufficient complement of personnel commensurate with the accounting and reporting requirements of a public company. The material weaknesses identified relate to inadequate controls that address segregation of certain accounting duties and reconciliation and analysis of certain key accounts. We concluded that these material weaknesses arose because, as a pre-revenue private company recently formed, we and Centessa Subsidiaries did not have the necessary personnel to design effective components of internal control including risk assessment control activities information/communication and monitoring to satisfy the accounting and financial reporting requirements of a public company.

As of December 31, 2021, management remediated the material weaknesses described above through hiring additional qualified accounting and financial reporting personnel, and designing and implementing financial reporting systems, processes, policies and internal controls. However, management must continually evaluate the internal control environment and make enhancements to people, processes and systems which will require the investment of significant resources. There is no guarantee that new or additional material weaknesses will not be identified in the future. If material weaknesses arise in the future, our financial statements could contain material misstatements that, when discovered in the future, could cause us to fail to meet our future reporting obligations and cause the price of our ADSs to decline.

If we fail to develop or maintain an effective system of disclosure controls and internal control over financial reporting, our ability to produce timely and accurate financial statements or comply with applicable regulations could be impaired.

As a public company, we will be required to develop and maintain internal control over financial reporting and to report any material weaknesses in such internal controls. The Sarbanes-Oxley Act, requires that we evaluate and determine the effectiveness of our internal control over financial reporting and, beginning with our second annual report following our initial public offering, provide a management report on internal control over financial reporting. In addition, once we are no longer an emerging growth company, we will be required to include an attestation report on internal control over financial reporting issued by our independent registered public accounting firm.

Any failure to develop or maintain effective controls, or any difficulties encountered in their implementation or improvement, could harm our results of operations, cause us to fail to meet our reporting obligations, result in a restatement of our financial statements for prior periods, or adversely affect the results of management evaluations and independent registered public accounting firm audits of our internal control over financial reporting that we will eventually be required to include in our periodic reports that will be filed with the SEC. In addition, to the extent we acquire or establish additional

consolidated subsidiaries, the financial statements of such entities may not be initially prepared by us, and we will not have direct control over their financial statement preparation. As a result, we will, for our financial reporting, depend on what these entities report to us, which could result in our adding monitoring and audit processes, and increase the difficulty of implementing and maintaining adequate controls over our financial processes and reporting in the future, which could lead to delays in our external reporting. In particular, this may occur where we are establishing such entities with partners that do not have sophisticated financial accounting processes in place, or where we are entering into new relationships at a rapid pace, straining our integration capacity. Additionally, if we do not receive the information from the consolidated subsidiaries on a timely basis, it could cause delays in our external reporting. Ineffective disclosure controls and procedures and internal controls over financial reporting could also cause investors to lose confidence in our reported financial and other information, which would likely have a negative effect on the trading price of our ADSs.

We have relied upon and, in the future we expect to continue to rely upon third-party contracted service providers to assist with our financial reporting. We are in the process of designing and implementing internal controls over financial reporting required to comply with the Sarbanes-Oxley Act. This process will be time consuming, costly, and complicated. If we are unable to assert that our internal control over financial reporting is effective or when required in the future, if our independent registered public accounting firm issues an adverse opinion on the effectiveness of our internal control over financial reporting, investors may lose confidence in the accuracy and completeness of our financial reports, the market price of our ADSs could be adversely affected and we could become subject to investigations by the stock exchange on which our securities are listed, the SEC, or other regulatory authorities, which could require additional financial and management resources.

The United Kingdom's withdrawal from the EU could increase the regulatory burden of product development and authorization in the United Kingdom and European Union.

On June 23, 2016, a majority of voters in the UK voted in favor of the UK withdrawing from the European Union in a national referendum, commonly referred to as Brexit, and the UK formally left the EU on January 31, 2020. There was a transition period during which EU pharmaceutical laws continued to apply to the UK, which expired on December 31, 2020. However, the EU and the UK have concluded a trade and cooperation agreement, or TCA, which was provisionally applicable since January 1, 2021 and has been formally applicable since May 1, 2021. The TCA includes specific provisions concerning pharmaceuticals, which include the mutual recognition of GMP, inspections of manufacturing facilities for medicinal products and GMP documents issued, but does not foresee wholesale mutual recognition of the UK and EU pharmaceutical regulations. At present, Great Britain has implemented EU legislation on the marketing, promotion and sale of medicinal products through the Human Medicines Regulations 2012 (as amended) (under the Northern Ireland Protocol, the EU regulatory framework will continue to apply in Northern Ireland). The regulatory regime in Great Britain therefore currently aligns in the most part with EU regulations, however it is possible that these regimes will diverge in future now that Great Britain's regulatory system is independent from the EU and the TCA does not provide for mutual recognition of UK and EU pharmaceutical legislation. For example, the new Clinical Trials Regulation which became effective in the EU on January 31, 2022 and provides for a streamlined clinical trial application and assessment procedure covering multiple EU Member States has not been implemented into UK law, and a separate application will need to be submitted for clinical trial authorization in the UK.

The cumulative effects of the disruption to the regulatory framework may add to the development lead time to an MA and commercialization of products in the EU and/or the UK. It is possible that there will be increased regulatory complexities which can disrupt the timing of our clinical trials and regulatory approvals. In addition, changes in, and legal uncertainty with regard to, national and international laws and regulations may present difficulties for our clinical and regulatory strategy.

In addition, as a result of Brexit, other EU Member States may seek to conduct referenda with respect to their continuing membership with the EU. Given these possibilities and others we may not anticipate, as well as the absence of comparable precedent, it is unclear what financial, regulatory and legal implications the withdrawal of the UK from the EU will have in the long-term and the full extent to which our business could be adversely affected.

Holders of ADSs are not treated as holders of our ordinary shares.

By investing in our company, you are a holder of ADSs with underlying ordinary shares in a company incorporated under English law. Holders of ADSs are not treated as holders of our ordinary shares, unless they withdraw the ordinary shares underlying their ADSs in accordance with the deposit agreement and applicable laws and regulations.

The depositary is the holder of the ordinary shares underlying the ADSs. Holders of ADSs therefore do not have any rights as holders of our ordinary shares, other than the rights that they have pursuant to the deposit agreement.

Holders of ADSs may be subject to limitations on the transfer of their ADSs and the withdrawal of the underlying ordinary shares.

ADSs are transferable on the books of the depositary. However, the depositary may close its books at any time or from time to time when it deems expedient in connection with the performance of its duties. The depositary may refuse to deliver, transfer or register transfers of ADSs generally when our books or the books of the depositary are closed, or at any time if we or the depositary think it is advisable to do so because of any requirement of law, government or governmental body, or under any provision of the deposit agreement, or for any other reason, subject to the right of ADS holders to cancel their ADSs and withdraw the underlying ordinary shares. Temporary delays in the cancellation of your ADSs and withdrawal of the underlying ordinary shares may arise because the depositary has closed its transfer books or we have closed our transfer books, the transfer of ordinary shares is blocked to permit voting at a shareholders' meeting or we are paying a dividend on our ordinary shares. In addition, ADS holders may not be able to cancel their ADSs and withdraw the underlying ordinary shares when they owe money for fees, taxes and similar charges and when it is necessary to prohibit withdrawals in order to comply with any laws or governmental regulations that apply to ADSs or to the withdrawal of ordinary shares or other deposited securities.

We are entitled to amend the deposit agreement and to change the rights of ADS holders under the terms of such agreement, or to terminate the deposit agreement, without the prior consent of the ADS holders.

We are entitled to amend the deposit agreement and to change the rights of the ADS holders under the terms of such agreement, without the prior consent of the ADS holders. We and the depositary may agree to amend the deposit agreement in any way we decide is necessary or advantageous to us or to the depositary. Amendments may reflect, among other things, operational changes in the ADS program, legal developments affecting ADSs or changes in the terms of our business relationship with the depositary. In the event that the terms of an amendment are materially disadvantageous to ADS holders, ADS holders will only receive 30 days' advance notice of the amendment, and no prior consent of the ADS holders is required under the deposit agreement. Furthermore, we may decide to direct the depositary to terminate the ADS facility at any time for any reason. For example, terminations may occur when we decide to list our ordinary shares on a non-U.S. securities exchange and determine not to continue to sponsor an ADS facility or when we become the subject of a takeover or a going-private transaction. If the ADS facility will terminate, ADS holders will receive at least 30 days' prior notice, but no prior consent is required from them. Under the circumstances that we decide to make an amendment to the deposit agreement that is disadvantageous to ADS holders or terminate the deposit agreement, the ADS holders may choose to sell their ADSs or surrender their ADSs and become direct holders of the underlying ordinary shares, but will have no right to any compensation whatsoever.

ADS holders may not be entitled to a jury trial with respect to claims arising under the deposit agreement, which could result in less favorable outcomes to the plaintiff(s) in any such action.

The deposit agreement governing the ADSs representing our ordinary shares provides that, to the fullest extent permitted by law, holders and beneficial owners of ADSs irrevocably waive the right to a jury trial of any claim they may have against us or the depositary arising out of or relating to the ADSs or the deposit agreement.

If this jury trial waiver provision is not permitted by applicable law, an action could proceed under the terms of the deposit agreement with a jury trial. If we or the depositary opposed a jury trial demand based on the waiver, the court would determine whether the waiver was enforceable based on the facts and circumstances of that case in accordance with the applicable state and federal law. To our knowledge, the enforceability of a contractual pre-dispute jury trial waiver in connection with claims arising under the federal securities laws has not been finally adjudicated by the United States Supreme Court. However, we believe that a contractual pre-dispute jury trial waiver provision is generally enforceable, including under the laws of the State of New York, which govern the deposit agreement, by a federal or state court in the City of New York, which has non-exclusive jurisdiction over matters arising under the deposit agreement. In determining whether to enforce a contractual pre-dispute jury trial waiver provision, courts will generally consider whether a party knowingly, intelligently and voluntarily waived the right to a jury trial. We believe that this is the case with respect to the deposit agreement and the ADSs. It is advisable that you consult legal counsel regarding the jury waiver provision before entering into the deposit agreement.

If ADS holders or beneficial owners of ADSs bring a claim against us or the depositary in connection with matters arising under the deposit agreement or the ADSs, including claims under federal securities laws, the ADS holder or beneficial owner may not be entitled to a jury trial with respect to such claims, which may have the effect of limiting and discouraging lawsuits against us and/or the depositary. If a lawsuit is brought against us and/or the depositary under the deposit agreement, it may be heard only by a judge or justice of the applicable trial court, which would be conducted according to different civil procedures and may result in different outcomes than a trial by jury would have had, including results that could be less favorable to the plaintiff(s) in any such action, depending on, among other things, the nature of the claims, the judge or justice hearing such claims, and the venue of the hearing.

No condition, stipulation or provision of the deposit agreement or ADSs serves as a waiver by any holder or beneficial owner of ADSs or by us or the depositary of compliance with the U.S. federal securities laws and the rules and regulations promulgated thereunder.

Moreover, as the jury trial waiver relates to claims arising out of or relating to the ADSs or the deposit agreement, we believe that, as a matter of construction of the clause, the waiver would likely to continue to apply to ADS holders who withdraw the ordinary shares from the ADS facility with respect to claims arising before the cancellation of the ADSs and the withdrawal of the ordinary shares, and the waiver would most likely not apply to ADS holders who subsequently withdraw the ordinary shares represented by ADSs from the ADS facility with respect to claims arising after the withdrawal. However, to our knowledge, there has been no caselaw on the applicability of the jury trial waiver to ADS holders who withdraw the ordinary shares represented by the ADSs from the ADS facility.

ADS holders will not have the same voting rights as the holders of our ordinary shares and may not receive voting materials in time to be able to exercise their right to vote.

Except as described in the deposit agreement, holders of the ADSs will not be able to exercise voting rights attaching to the ordinary shares represented by the ADSs. Under the terms of the deposit agreement, holders of the ADSs may instruct the depositary to vote the ordinary shares underlying their ADSs. Otherwise, holders of ADSs will not be able to exercise their right to vote unless they withdraw the ordinary shares underlying their ADSs to vote them in person or by proxy in accordance with applicable laws and regulations and our articles of association. Even so, ADS holders may not know about a meeting far enough in advance to withdraw those ordinary shares. If we ask for the instructions of holders of the ADSs, the depositary, upon timely notice from us, will notify ADS holders of the upcoming vote and arrange to deliver our voting materials to them. Upon our request, the depositary will mail to holders a shareholder meeting notice that contains, among other things, a statement as to the manner in which voting instructions may be given. We cannot guarantee that ADS holders will receive the voting materials in time to ensure that they can instruct the depositary to vote the ordinary shares underlying their ADSs. A shareholder is only entitled to participate in, and vote at, the meeting of shareholders, provided that it holds our ordinary shares as of the record date set for such meeting and otherwise complies with our articles of association. In addition, the depositary's liability to ADS holders for failing to execute voting instructions or for the manner of executing voting instructions is limited by the deposit agreement. As a result, holders of ADSs may not be able to exercise their right to give voting instructions or to vote in person or by proxy and they may not have any recourse against the depositary or us if their ordinary shares are not voted as they have requested or if their shares cannot be voted.

ADS holders may not receive distributions on our ordinary shares represented by the ADSs or any value for them if it is illegal or impractical to make them available to holders of ADSs.

The depositary for the ADSs has agreed to pay to you the cash dividends or other distributions it or the custodian receives on our ordinary shares or other deposited securities after deducting its fees and expenses. You will receive these distributions in proportion to the number of our ordinary shares your ADSs represent. However, in accordance with the limitations set forth in the deposit agreement, it may be unlawful or impractical to make a distribution available to holders of ADSs. We have no obligation to take any other action to permit distribution on the ADSs, ordinary shares, rights or anything else to holders of the ADSs. This means that ADS holders may not receive the distributions we make on our ordinary shares or any value from them if it is unlawful or impractical to make them available. These restrictions may have an adverse effect on the value of your ADSs.

Claims of U.S. civil liabilities may not be enforceable against us.

We are incorporated under English law and have our registered office in England. Certain members of our board of directors and senior management are non-residents of the United States, and all or a substantial portion of our assets and

the assets of such persons are located outside the United States. As a result, it may not be possible to serve process on such persons or us in the United States or to enforce judgments obtained in U.S. courts against them or us based on civil liability provisions of the securities laws of the United States.

The United States and England and Wales do not currently have a treaty providing for recognition and enforcement of judgments (other than arbitration awards) in civil and commercial matters. Consequently, a final judgment for payment given by a court in the United States, whether or not predicated solely upon U.S. securities laws, would not automatically be recognized or enforceable in England and Wales. In addition, uncertainty exists as to whether the courts of England and Wales would entertain original actions brought in England and Wales against us or our directors or senior management predicated upon the securities laws of the United States or any state in the United States. Any final and conclusive monetary judgment for a definite sum obtained against us in U.S. courts would be treated by the courts of England and Wales as a cause of action in itself and sued upon as a debt at common law so that no retrial of the issues would be necessary, provided that certain requirements are met. Whether these requirements are met in respect of a judgment based upon the civil liability provisions of the U.S. securities laws, including whether the award of monetary damages under such laws would constitute a penalty, is an issue for the court making such decision. If the courts of England and Wales give judgment for the sum payable under a U.S. judgment, the judgment of the English and Welsh court will be enforceable by methods generally available for this purpose. These methods generally permit the courts of England and Wales discretion to prescribe the manner of enforcement.

As a result, U.S. investors may not be able to enforce against us or our senior management, board of directors or certain experts named herein who are residents of England and Wales or countries other than the United States any judgments obtained in U.S. courts in civil and commercial matters, including judgments under the U.S. federal securities laws.

ADS holders' right to participate in any future rights offerings may be limited, which may cause dilution to their holdings.

We may from time to time distribute rights to our shareholders, including rights to acquire our securities. However, we cannot make rights available to ADS holders in the United States unless we register the rights and the securities to which the rights relate under the Securities Act or an exemption from the registration requirements is available. Also, under the deposit agreement, the depositary bank will not make rights available to ADS holders unless either both the rights and any related securities are registered under the Securities Act, or the distribution of them to ADS holders is exempted from registration under the Securities Act. We are under no obligation to file a registration statement with respect to any such rights or securities or to endeavor to cause such a registration statement to be declared effective. Moreover, we may not be able to establish an exemption from registration under the Securities Act. If the depositary does not distribute the rights, it may, under the deposit agreement, either sell them, if possible, or allow them to lapse. Accordingly, ADS holders may be unable to participate in our rights offerings and may experience dilution in your holdings.

If we are a controlled foreign corporation, there could be material adverse U.S. federal income tax consequences to certain U.S. Holders.

Each "Ten Percent Shareholder" (as defined below) in a non-U.S. corporation that is classified as a "controlled foreign corporation," or a CFC, for U.S. federal income tax purposes generally is required to include in income for U.S. federal tax purposes such Ten Percent Shareholder's pro rata share of the CFC's "Subpart F income" and investment of earnings in U.S. property, even if the CFC has made no distributions to its shareholders. Subpart F income generally includes dividends, interest, rents, royalties, "global intangible low-taxed income," gains from the sale of securities and income from certain transactions with related parties. In addition, a Ten Percent Shareholder that realizes gain from the sale or exchange of shares in a CFC may be required to classify a portion of such gain as dividend income rather than capital gain. A non-U.S. corporation generally will be classified as a CFC for U.S. federal income tax purposes if Ten Percent Shareholders own, directly or indirectly, more than 50% of either the total combined voting power of all classes of stock of such corporation entitled to vote or of the total value of the stock of such corporation. A "Ten Percent Shareholder" is a United States person (as defined by the Code) who owns or is considered to own 10% or more of the total combined voting power of all classes of stock entitled to vote or 10% or more of the total value of all classes of stock of such corporation.

We do not expect to be a CFC in the current taxable year; however, it is possible that we may become a CFC in a subsequent taxable year. The determination of CFC status is complex and includes attribution rules, the application of which is not certain. In addition, as a result of recent changes made to the attribution rules in the Code, the stock of our non-U.S. subsidiaries is attributed to our U.S. subsidiary, which results in our non-U.S. subsidiaries being treated as CFCs

and could result in certain United States persons being treated as Ten Percent Shareholders of such non-U.S. subsidiary CFCs. We cannot provide any assurances that we will assist holders of our ordinary shares or ADSs in determining whether we are treated as a CFC or whether any holder of ordinary shares or ADSs is treated as a Ten Percent Shareholder with respect to any such CFC or furnish to any Ten Percent Shareholders information that may be necessary to comply with the aforementioned reporting and tax paying obligations.

U.S. Holders should consult their own tax advisors with respect to the potential material adverse U.S. tax consequences of becoming a Ten Percent Shareholder in a CFC, including the possibility and consequences of becoming a Ten Percent Shareholder in our non-U.S. subsidiaries that are treated as CFCs due to the changes to the attribution rules. If we are classified as both a CFC and a PFIC (as defined below), we generally will not be treated as a PFIC with respect to those U.S. Holders that meet the definition of a Ten Percent Shareholder during the period in which we are a CFC.

There is substantial uncertainty as to whether we are or will be a "PFIC". If we are a PFIC, there could be material adverse U.S. federal income tax consequences to U.S. holders.

Under the Code, we will be a PFIC, for any taxable year in which (1) 75% or more of our gross income consists of passive income or (2) 50% or more of the average quarterly value of our assets consists of assets that produce, or are held for the production of, passive income. For purposes of these tests, passive income includes dividends, interest, gains from the sale or exchange of investment property and certain rents and royalties. In addition, for purposes of the above calculations, a non-U.S. corporation that directly or indirectly owns at least 25% by value of the shares of another corporation is treated as holding and receiving directly its proportionate share of assets and income of such corporation. If we are a PFIC for any taxable year during which a U.S. Holder holds our ordinary shares or ADSs, the U.S. Holder may be subject to material adverse tax consequences regardless of whether we continue to qualify as a PFIC, including ineligibility for any preferred tax rates on capital gains or on actual or deemed dividends, interest charges on certain taxes treated as deferred and additional reporting requirements.

While we believe we were not a PFIC for 2021, it is uncertain whether we or any of our Centessa Subsidiaries will be treated as a PFIC for U.S. federal income tax purposes for the current or any subsequent tax year. The determination of whether we are a PFIC is a fact-intensive determination made on an annual basis applying principles and methodologies that in some circumstances are unclear and subject to varying interpretation. The value of our assets would also be determined differently for the purposes of this determination if we were treated as a CFC, as discussed above. Under the income test described above, our status as a PFIC depends on the composition of our income which will depend on the transactions we enter into in the future and our corporate structure. The composition of our income and assets is also affected by the spending of the cash we raise in any offering, including in our initial public offering. Because PFIC status is based on our income, assets, and activities for the entire taxable year, we cannot make a conclusive determination at this time as to whether we will be a PFIC for 2022 and our PFIC status may change from year to year. Although we will try to manage our business to avoid becoming a PFIC, our operations currently generate very limited amounts of non-passive income. Until we generate sufficient revenue from active licensing and other non-passive sources, there is a risk that we will be a PFIC under the PFIC income test.

In certain circumstances, a U.S. Holder of shares in a PFIC may alleviate some of the adverse tax consequences described above by making either a "qualified electing fund" ("QEF"), election or a mark-to-market election (if our ordinary shares or ADSs constitute "marketable" securities under the Code). However, a U.S. Holder may make a QEF election with respect to our ordinary shares or ADSs only if we agree to furnish such U.S. Holder annually with required information. If we determine that we are a PFIC for this taxable year or any future taxable year, we currently expect that we would make available the information necessary for U.S. Holders to make a QEF Election. However, there is also no assurance that we will have timely knowledge of our status as a PFIC in the future or of the required information to be provided.

If we are a PFIC and, at any time, have a foreign subsidiary that is classified as a PFIC, U.S. Holders generally would be deemed to own a portion of the shares of such lower-tier PFIC, and generally could incur liability for the deferred tax and interest charge described above if we receive a distribution from, or dispose of all or part of our interest in, the lower-tier PFIC or the U.S. Holders otherwise were deemed to have disposed of an interest in the lower-tier PFIC. If we determine that we are a PFIC, to the extent appropriate, we currently expect that we will cause any lower-tier PFIC that we control to provide to a U.S. Holder the information necessary for U.S Holders to make or maintain a QEF election with respect to the lower-tier PFIC. However, in the future, we may not hold a controlling interest in any such lower-tier PFIC and thus there can be no assurance that we will be able to cause the lower-tier PFIC to provide such required information.

A mark-to-market election generally would not be available with respect to such lower-tier PFIC. U.S. Holders are urged to consult their tax advisors regarding the tax issues raised by lower-tier PFICs.

U.S. Holders should consult their own tax advisors with respect to the potential material adverse U.S. tax consequences if we or any of our Centessa Subsidiaries are or were to become a PFIC.

Future changes to tax laws could materially adversely affect our company and reduce net returns to our shareholders.

We conduct business globally. The tax treatment of the company or any of the group companies is subject to changes in tax laws, regulations and treaties, or the interpretation thereof, tax policy initiatives and reforms under consideration and the practices of tax authorities in jurisdictions in which we operate, as well as international tax policy initiatives and reforms including those related to the Organization for Economic Co-Operation and Development's ("OECD"), Base Erosion and Profit Shifting ("BEPS"), Project, the European Commission's state aid investigations and other initiatives. Such changes may include (but are not limited to) the taxation of operating income, investment income, dividends received or (in the specific context of withholding tax) dividends paid.

We are unable to predict what tax reform may be proposed or enacted in the future or what effect such changes would have on our business, but such changes, to the extent they are brought into tax legislation, regulations, policies or practices, could affect our financial position, future results of operations, cash flows in a particular period and overall or effective tax rates in the future in countries where we have operations, reduce post-tax returns to our shareholders, and increase the complexity, burden and cost of tax compliance.

Tax authorities may disagree with our positions and conclusions regarding certain tax positions, resulting in unanticipated costs, taxes or non-realization of expected benefits.

We operate through various Centessa Subsidiaries in a number of countries throughout the world. Consequently, we are subject to tax laws, treaties, and regulations in the countries in which we operate, and these laws and treaties are subject to interpretation. We have taken, and will continue to take, tax positions based on our interpretation of such tax laws. A tax authority may disagree with tax positions that we have taken, which could result in increased tax liabilities. For example, HM Revenue & Customs ("HMRC"), the Internal Revenue Service or another tax authority could challenge our allocation of income by tax jurisdiction and the amounts paid between our affiliated companies pursuant to our intercompany arrangements and transfer pricing policies, including amounts paid with respect to our intellectual property development. There can be no assurance that a taxing authority will not have a different interpretation of applicable law and assess us with additional taxes. Similarly, a tax authority could assert that we are subject to tax in a jurisdiction where we believe we have not established a taxable connection, often referred to as a "permanent establishment" under international tax treaties, and such an assertion, if successful, could increase our expected tax liability in one or more jurisdictions. If we are assessed with additional taxes, this may result in a material adverse effect on our results of operations and/or financial condition.

A tax authority may take the position that material income tax liabilities, interest and penalties are payable by us, for example where there has been a technical violation of contradictory laws and regulations that are relatively new and have not been subject to extensive review or interpretation, in which case, we expect that we might contest such assessment. Contesting such an assessment may be lengthy and costly and if we were unsuccessful in disputing the assessment, the implications could increase our anticipated effective tax rate, where applicable, or result in other liabilities.

We may be unable to use U.K. net operating loss and tax credit carryforwards and certain built-in losses to reduce future tax payments or benefit from favorable U.K. tax legislation.

As a U.K. incorporated and tax resident entity, we are subject to U.K. corporate taxation on tax-adjusted trading profits. Due to the nature of our business, we have generated losses since inception and have not paid any U.K. corporation tax. We therefore have accumulated carryforward tax losses. Subject to numerous utilization criteria and restrictions (including those that limit the percentage of profits that can be reduced by carried forward losses and those that can restrict the use of carried forward losses where there is a change of ownership of more than half the ordinary shares of the Company and a major change in the nature, conduct or scale of the trade), we expect these to be eligible for carry forward and utilization against future operating profits. The use of loss carryforwards in relation to U.K. profits incurred on or after April 1, 2017 is generally limited each year to £5.0 million plus an incremental 50% of U.K. taxable profits. In addition, if we were to have a major change in the nature of the conduct of our trade, loss carryforwards may be restricted or extinguished.

As a company that carries out extensive research and development activities, we seek to benefit from the U.K. research and development tax relief regime for Small and Medium-sized Enterprises ("the SME R&D regime"). Where available, we may be able to surrender the trading losses that arise from our qualifying research and development activities for cash or carried forward for potential offset against future profits (subject to relevant restrictions). The majority of our pipeline research, clinical trials management and manufacturing development activities are eligible for inclusion within these tax credit cash rebate claims. Our eligibility to claim payable research and development tax credits may be limited or eliminated because we may no longer qualify as a small or medium-sized company. Should this be the case, then we would seek to benefit from the Research and Development Expenditure Credit ("RDEC") regime, available for large companies, which also provides a cash tax saving. A change to the SME R&D regime is contained in legislation enacted by the U.K. Parliament, will come into force for accounting periods starting on or after April 2021, relating to an SME PAYE cap. Centessa's first accounting period under the revised rules will be therefore be the year commencing January 1, 2022, assuming the Company continues to be an SME. The revised rules could in some cases cap claims under the SME R&D regime to a multiple of payroll taxes (broadly, to a maximum payable credit equal to £20,000 plus three times the total PAYE and NICs liability of the company). This cap may limit the value we can claim. Further changes are anticipated to both the SME R&D regime and RDEC regime from April 1, 2023, which could prevent overseas costs from qualifying for UK R&D claims. There may be exceptions to these rules, which the U.K. Government has not yet announced. We may be impacted by these changes.

We may benefit in the future from the United Kingdom's "patent box" regime, which allows certain profits attributable to revenues from patented products (and other qualifying income) to be taxed at an effective rate of 10%. We are the exclusive licensee or owner of several patent applications which, if granted, would cover our product candidates, and accordingly, future upfront fees, milestone fees, product revenues and royalties could be taxed at this lower tax rate. When taken in combination with the enhanced relief available on our research and development expenditures, we expect a long-term lower rate of corporation tax to apply to us. If, however, there are unexpected adverse changes to the U.K. research and development tax credit regime or the "patent box" regime, or for any reason we are unable to qualify for such advantageous tax legislation, or we are unable to use net operating loss and tax credit carryforwards and certain built-in losses to reduce future tax payments then our business, results of operations and financial condition may be adversely affected.

Shareholder protections found in provisions under the UK City Code on Takeovers and Mergers, or the Takeover Code, will not apply if our place of central management and control remains outside of the United Kingdom (or the Channel Islands or the Isle of Man).

We believe that our place of central management and control is not in the United Kingdom (or the Channel Islands or the Isle of Man) for the purposes of the jurisdictional criteria of the Takeover Code. Accordingly, we believe that we are not currently subject to the Takeover Code and, as a result, our shareholders are not currently entitled to the benefit of certain takeover offer protections provided under the Takeover Code, including the rules regarding mandatory takeover bids.

In the event that this changes, or if the interpretation and application of the Takeover Code by the Panel on Takeovers and Mergers ("Takeover Panel"), changes (including changes to the way in which the Takeover Panel assesses the application of the Takeover Code to English companies whose shares are listed outside of the United Kingdom), the Takeover Code may apply to us in the future.

The Takeover Code provides a framework within which takeovers of companies which are subject to the Takeover Code are regulated and conducted. The following is a brief summary of some of the most important rules of the Takeover Code:

- in connection with a potential offer, if following an approach by or on behalf of a potential bidder, the company is "the subject of rumor or speculation" or there is an "untoward movement" in the company's share price, there is a requirement for the potential bidder to make a public announcement about a potential offer for the company, or for the company to make a public announcement about its review of a potential offer
- when any person, or group of persons acting in concert, acquires, whether by a series of transactions over a period of time or not, an interest in shares which (taken together with shares already held by that person and an interest in shares held or acquired by persons acting in concert with him or her) carry 30% or more of the voting rights of a company that is subject to the Takeover Code, that person is generally required to make a mandatory offer to all the holders of any class of equity share capital or other class of transferable securities carrying voting rights in that company to acquire the balance of their interests in the company;

- when any person who, together with persons acting in concert with him or her, is interested in shares representing not less than 30% but does not hold more than 50% of the voting rights of a company that is subject to the Takeover Code, and such person, or any person acting in concert with him or her, acquires an additional interest in shares which increases the percentage of shares carrying voting rights in which he or she is interested, then such person is generally required to make a mandatory offer to all the holders of any class of equity share capital or other class of transferable securities carrying voting rights of that company to acquire the balance of their interests in the company;
- a mandatory offer triggered in the circumstances described in the two paragraphs above must be in cash (or be accompanied by a cash alternative) and at not less than the highest price paid within the preceding 12 months to acquire any interest in shares in the company by the person required to make the offer or any person acting in concert with him or her;
- in relation to a voluntary offer (i.e. any offer which is not a mandatory offer), when interests in shares representing 10% or more of the shares of a class have been acquired for cash by an offeror (i.e., a bidder) and any person acting in concert with it in the offer period and the previous 12 months, the offer must be in cash or include a cash alternative for all shareholders of that class at not less than the highest price paid for any interest in shares of that class by the offeror and by any person acting in concert with it in that period. Further, if an offeror, or any person acting in concert with them, acquires for cash any interest in shares during the offer period, a cash alternative must be made available at not less than the highest price paid for any interest in the shares of that class;
- if, after making an offer for a company, the offeror or any person acting in concert with them acquires an interest in shares in an offeree company (i.e., a target) at a price higher than the value of the offer, the offer must be increased to not less than the highest price paid for the interest in shares so acquired;
- the offeree company must appoint a competent independent adviser whose advice on the financial terms of the offer must be made known to all the shareholders, together with the opinion of the board of directors of the offeree company;
- special or favorable deals for selected shareholders are not permitted, except in certain circumstances where independent shareholder approval is given and the arrangements are regarded as fair and reasonable in the opinion of the financial adviser to the offeree;
- all shareholders must be given the same information;
- each document published in connection with an offer by or on behalf of the offeror or offeree must state that the directors of the offeror or the offeree, as the case may be, accept responsibility for the information contained therein;
- profit forecasts, quantified financial benefits statements and asset valuations must be made to specified standards and must be reported on by professional advisers;
- misleading, inaccurate or unsubstantiated statements made in documents or to the media must be publicly corrected immediately;
- actions during the course of an offer by the offeree company, which might frustrate the offer are generally prohibited unless shareholders approve these plans. Frustrating actions would include, for example, lengthening the notice period for directors under their service contract or agreeing to sell off material parts of the target group;
- stringent requirements are laid down for the disclosure of dealings in relevant securities during an offer, including the prompt disclosure of positions and dealing in relevant securities by the parties to an offer and any person who is interested (directly or indirectly) in 1% or more of any class of relevant securities; and
- employees of both the offeror and the offeree company and the trustees of the offeree company's pension scheme must be informed about an offer. In addition, the offeree company's employee representatives and pension scheme trustees have the right to have a separate opinion on the effects of the offer on employment appended to the offeree board of directors' circular or published on a website.

The rights of our shareholders may differ from the rights typically offered to shareholders of a U.S. corporation.

We are incorporated under the laws of England and Wales. The rights of holders of ordinary shares and, therefore, certain of the rights of holders of ADS, are governed by English law, including the provisions of the Companies Act, and

by our articles of association. These rights differ in certain respects from the rights of shareholders in typical U.S. corporations.

The principal differences include the following:

- under English law and our articles of association, each shareholder present at a meeting has only one vote unless demand is made for a vote on a poll, in which case each holder gets one vote per share owned. Under U.S. law, each shareholder typically is entitled to one vote per share at all meetings;
- under English law, it is only on a poll that the number of shares determines the number of votes a holder may cast. You should be aware, however, that the voting rights of ADS are also governed by the provisions of a deposit agreement with our depositary bank;
- under English law, subject to certain exceptions and disapplications, each shareholder generally has preemptive rights to subscribe on a proportionate basis to any issuance of ordinary shares or rights to subscribe for, or to convert securities into, ordinary shares for cash. Under U.S. law, shareholders generally do not have preemptive rights unless specifically granted in the certificate of incorporation or otherwise;
- under English law and our articles of association, certain matters require the approval of 75% of the shareholders who vote (in person or by proxy) on the relevant resolution (or on a poll of shareholders representing 75% of the ordinary shares voting (in person or by proxy)), including amendments to the articles of association. This may make it more difficult for us to complete corporate transactions deemed advisable by our board of directors. Under U.S. law, generally only majority shareholder approval is required to amend the certificate of incorporation or to approve other significant transactions;
- in the United Kingdom, takeovers may be structured as takeover offers or as schemes of arrangement. Under English law, a bidder seeking to acquire us by means of a takeover offer would need to make an offer for all of our outstanding ordinary shares/ADS. If acceptances are not received for 90% or more of the ordinary shares/ADS under the offer, under English law, the bidder cannot complete a "squeeze out" to obtain 100% control of us. Accordingly, acceptances of 90% of our outstanding ordinary shares/ADSs will likely be a condition in any takeover offer to acquire us, not 50% as is more common in tender offers for corporations organized under Delaware law. By contrast, a scheme of arrangement, the successful completion of which would result in a bidder obtaining 100% control of us, requires the approval of a majority of shareholders voting at the meeting and representing 75% of the ordinary shares voting for approval; and
- under English law and our articles of association, shareholders and other persons whom we know or have reasonable cause to believe are, or have been, interested in our shares may be required to disclose information regarding their interests in our shares upon our request, and the failure to provide the required information could result in the loss or restriction of rights attaching to the shares, including prohibitions on certain transfers of the shares, withholding of dividends and loss of voting rights. Comparable provisions generally do not exist under U.S. law.

As an English public limited company, certain capital structure decisions will require shareholder approval, which may limit our flexibility to manage our capital structure.

English law provides that a board of directors may only allot shares (or grant rights to subscribe for or to convert any security into shares) with the prior authorization of shareholders, either pursuant to an ordinary resolution or as set out in the articles of association. This authorization must state the aggregate nominal amount of shares that it covers, can be valid up to a maximum period of five years and can be varied, renewed or revoked by shareholders. Such authority from our shareholders to allot additional shares for a period of five years from 2021 was included in the ordinary resolution passed by our shareholders on May 20, 2021, which authorization will need to be renewed upon expiration (i.e., at least every five years) but may be sought more frequently for additional five-year terms (or any shorter period).

English law also generally provides shareholders with preemptive rights when new shares are issued for cash. However, it is possible for the articles of association, or for shareholders to pass a special resolution at a general meeting, being a resolution passed by at least 75% of the votes cast, to disapply preemptive rights. Such a disapplication of preemptive rights may be for a maximum period of up to five years from the date of adoption of the articles of association, if the disapplication is contained in the articles of association, but not longer than the duration of the authority to allot shares to which this disapplication relates or from the date of the shareholder special resolution, if the disapplication is by shareholder special resolution. In either case, this disapplication would need to be renewed by our shareholders upon its expiration (i.e., at least every five years). Such authority from our shareholders to disapply preemptive rights for a period of

five years was included in the special resolution passed by our shareholders on May 20, 2021, which disapplication will need to be renewed upon expiration (i.e., at least every five years) to remain effective, but may be sought more frequently for additional five-year terms (or any shorter period).

English law also generally prohibits a public company from repurchasing its own shares without the prior approval of its shareholders by ordinary resolution, being a resolution passed by a simple majority of votes cast, and other formalities. Such approval may be provided for a maximum period of up to five years. In addition, a public company can only affect a buyback of shares out of distributable profits or a fresh issue of shares and cannot do so out of capital.

Item 1B. Unresolved Staff Comments

None.

Item 2. Properties

Our corporate registered office is 3rd Floor, 1 Ashley Road, Altrincham, Cheshire, United Kingdom WA14 2DT. Due to the continuing impact of the COVID-19 global pandemic since our inception, we and many members of the Centessa Subsidiaries have been successfully working virtually. On February 7, 2022, we entered an agreement to lease approximately 18,922 square feet of office space in Boston, Massachusetts. We plan to locate our headquarters here once we complete a build out of the space.

Item 3. Legal Proceedings

From time to time, we may become involved in litigation or other legal proceedings. We are not currently a party to any litigation or legal proceedings that, in the opinion of our management, are probable to have a material adverse effect on our business. Regardless of outcome, litigation can have an adverse impact on our business, financial condition, results of operations and prospects because of defense and settlement costs, diversion of management resources and other factors.

Item 4. Mine Safety Disclosures

Not applicable.

PART II

Item 5. Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities

Market Information

Our American Depositary Shares ("ADSs"), which represent an ordinary share in Centessa, are listed on The NASDAQ Capital Market under the symbol CNTA. As of March 21, 2022, there were approximately nine registered holders of record of Centessa's ordinary shares, which include shares of record held by banks, brokers, and other financial institutions on behalf of beneficial owners. The transfer agent of our ADSs is Citibank Shareholder Services, whose telephone numbers are US Toll Free : 1 (877) 248-4237 & International Tel: 1 (781) 575-4555.

Dividend Policy

We have not declared or paid any dividends to our shareholders on our ordinary shares or our convertible preferred shares. We currently intend to retain all available funds and any future earnings, if any, to fund the development and expansion of our business and we do not anticipate paying any cash dividends in the foreseeable future. Investors should not purchase the ADSs with the expectation of receiving cash dividends.

Any future determination to pay dividends will be made at the discretion of our board of directors and may be based on a number of factors, including our future operations and earnings, capital requirements and surplus, general financial condition, contractual restrictions and other factors that our board of directors may deem relevant. In addition, our ability to pay dividends may be limited under English law. See "Risk Factors—We do not intend to pay dividends on our ordinary shares, so any returns will be limited to the value of our ordinary shares or ADSs." If we pay any dividends, ADS holders will generally have the right to receive the dividends paid on the underlying ordinary shares, subject to the terms of the deposit agreement, including the fees and expenses payable thereunder.

Equity Compensation Information

The information required by this item regarding equity compensation plans is incorporated by reference to the information set forth in Item 13 of this Annual Report on Form 10-K.

Recent Sales of Unregistered Securities

Not applicable.

Use of Proceeds

On May 27, 2021, our Registration Statement on Form S-1 (file No. 333-255393) was declared effective by the SEC for our initial public offering of common stock, or IPO. In June 2021, the Company completed an initial public offering ("IPO") of its ordinary shares through the sale and issuance of 16,500,000 ADSs, at an initial price of $20.00 per ADS. Each ADS represents one ordinary share with a nominal value of £0.002 per ordinary share. Following the close of the IPO, the underwriters fully exercised their option to purchase an additional 2,475,000 ADSs at the initial public offering price of $20.00 per ADS. The Company received aggregate net proceeds of $344.1 million in connection with the IPO and subsequent exercise of the underwriter's options after deducting underwriting discounts, commissions and other offering expenses paid or to be paid.

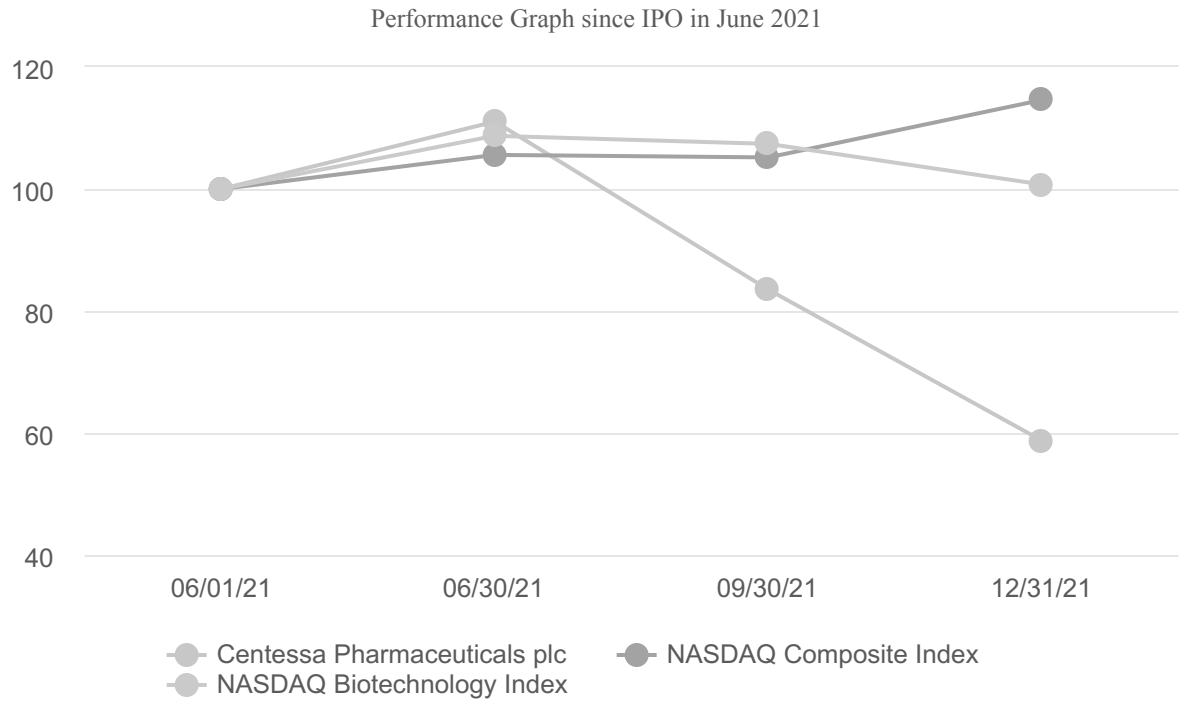
Except for the planned redeployment of resources from our imgatuzumab, Pearl River and dual-STAT3/5 degrader programs as described elsewhere in this annual report, there has been no material change in the expected use of the net proceeds from our IPO as described in our final prospectus filed with the SEC on June 1, 2021. Upon receipt, the net proceeds from our IPO were held in cash, cash equivalents and short-term investments.

Purchases of Equity Securities by the Issuer and Affiliated Purchasers

Not applicable.

Performance Graph

The following graph illustrates a comparison of the total cumulative stockholder return on our common stock to The Nasdaq Composite and The Nasdaq Biotechnology indices since our IPO on June 1, 2021, through December 31, 2021, 2020, assuming an initial investment of $100 on June 1, 2021. The share price performance on the following graph is not necessarily indicative of future stock price performance. This performance graph shall not be deemed "filed" for purposes of Section 18 of the Securities Exchange Act of 1934, as amended, or incorporated by reference into any of our filings under the Securities Act or the Exchange Act, except as shall be expressly set forth by specific reference in such filing.



Item 6. [Reserved.]

Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations

The following discussion and analysis should be read in conjunction with the consolidated and combined financial statements and related notes thereto of the Centessa Predecessor Group ("Predecessor") and Centessa Pharmaceuticals, plc ("Successor"), included elsewhere herein.

Overview

Centessa Pharmaceuticals plc ("Centessa" or "the Company") is clinical-stage pharmaceutical company with a R&D innovation engine that aims to discover, develop and ultimately deliver impactful medicines to patients. We seek to pursue the best assets in a capital efficient manner with objective and strategic decision-making to rapidly progress our programs through development. Through our approach, we strive to deliver medicines that can lead to significant impact for patients who are desperately in need of new treatments.

Centessa was incorporated on October 26, 2020 as a limited liability company under the laws of England and Wales. In connection with the IPO, we re-registered Centessa Pharmaceuticals Limited as an English public limited company and renamed it as Centessa Pharmaceuticals plc. In January 2021, we implemented our reimagined approach to research and development by completing the acquisition of eleven asset-centric private biotech companies (the Centessa Subsidiaries). Simultaneous with our acquisition of the Centessa Subsidiaries, we completed a $250.0 million Series A convertible preferred share financing that was comprised of $245.0 million in proceeds and the conversion of $5.0 million in convertible debt.

In June 2021, we completed an initial public offering ("IPO") of our ordinary shares through the sale and issuance of 16,500,000 American Depositary Shares, ("ADSs"), at an initial price of $20.00 per ADS. Each ADS represents one ordinary share with a nominal value of £0.002 per ordinary share. Following the close of the IPO, the underwriters fully exercised their option to purchase an additional 2,475,000 ADSs at the initial public offering price of $20.00 per ADS. We received aggregate net proceeds of $344.1 million in connection with the IPO and subsequent exercise of the underwriters' options after deducting underwriting discounts, commissions and other offering expenses paid or to be paid.

In October 2021, we entered into a financing agreement with funds managed by Oberland Capital and drew down an initial tranche of funding in the amount of $75.0 million. Since inception, Centessa has devoted substantially all of its resources to acquiring and developing product and technology rights, conducting research and development in its discovery and enabling stages, in its clinical and preclinical trials and raising capital. The Company has incurred recurring losses and negative cash flows from operations since inception and has funded operations primarily through the sale and issuance of its common stock and convertible preferred stock. The ability to generate product revenue sufficient to achieve profitability will depend heavily on the successful development and eventual commercialization of current or future product candidates. The Company expects to continue to incur significant expenses and increasing operating losses for the foreseeable future in connection with ongoing development activities related to the portfolio of programs as Centessa Subsidiaries advance the preclinical and clinical development of product candidates; perform research activities as Centessa seeks to discover and develop additional programs and product candidates; carry out maintenance, expansion enforcement, defense, and protection of its intellectual property portfolio; and hires additional research and development, clinical and commercial personnel. Based on the current operating plan, the Company expects the cash and cash equivalents as of December 31, 2021 of $595.1 million, to fund its operations into early 2024 without drawing on the remaining available tranches under the Oberland Capital financing agreement.

Covid-19 Update

The Company is continuing to proactively monitor the ongoing COVID-19 global pandemic, to assess the potential impact on our business, and to seek to avoid any unnecessary potential delays to our programs. At this time, the clinical programs and research activities remain largely on track, with some modest delays in clinical trial enrollment rates and supply chain activities. While we are unable to fully quantify the potential effects of this pandemic on our future operations, including any further delays to our preclinical and clinical programs, management continues to evaluate and to seek to mitigate risks. The safety and well-being of employees, patients and partners remains our highest priority.

Components of Results of Operations

Subsequent to the contribution of the Centessa Subsidiaries to Centessa, the financial activities of Centessa and all Centessa Subsidiaries are being presented on a consolidated basis and are denoted as "Successor" within management's discussion and analysis of the financial statements. The historical financial condition and results of operations for the periods presented may not be comparable due to the difference in basis of accounting for the Centessa Predecessor Group and Centessa Pharmaceuticals plc (previously Centessa Pharmaceuticals Limited). Prior to the acquisition of the Centessa Subsidiaries on January 29, 2021, the Centessa Predecessor Group consisted of three of the acquired companies (Z Factor Limited, LockBody Therapeutics Ltd and Morphogen-IX Limited). Following the acquisition of the Centessa Subsidiaries, Centessa Pharmaceuticals plc consisted of 20 legal entities, inclusive of the parent company and all indirect subsidiaries.

Revenues

The Company has not generated any revenue. The ability to generate product revenue and to become profitable will depend upon the ability to successfully develop, obtain regulatory approval and commercialize any current and future product candidates. Because of the numerous risks and uncertainties associated with product development and regulatory approval, the Company (Successor) is unable to predict the amount or timing of product revenue.

Research and Development Expense

Research and development expenses consist primarily of costs incurred in connection with the discovery and development of the Company's clinical and preclinical programs, net of reimbursements. Research and development costs are expensed as incurred. These expenses include:

- expenses incurred to conduct the necessary preclinical studies and clinical trials required to obtain regulatory approval;
- milestone payments pursuant to the license agreements;
- personnel expenses, including salaries, benefits and share-based compensation expense for employees engaged in research and development functions;
- costs of funding research performed by third parties, including pursuant to agreements with contract research organizations ("CROs"), as well as investigative sites and consultants that conduct preclinical studies and clinical trials;
- expenses incurred under agreements with CMOs, including manufacturing scale-up expenses and the cost of acquiring and manufacturing preclinical study and clinical trial materials;
- fees paid to consultants who assist with research and development activities;
- expenses related to regulatory activities, including filing fees paid to regulatory agencies; and
- allocated expenses for facility costs, including rent, utilities, depreciation and maintenance.

Research and development activities are central to the Company's business model. Product candidates in later stages of clinical development will generally have higher development costs than those in earlier stages of clinical development, primarily due to the increased size and duration of later-stage clinical trials. The Company expects research and development expenses to increase significantly over the next several years due to increases in personnel costs, including share-based compensation, increases in costs to conduct clinical trials for current product candidates and other clinical trials for future product candidates and prepare regulatory filings for any product candidates.

The successful development of the Company's current or future product candidates is highly uncertain. At this time, the Company cannot reasonably estimate or know the nature, timing and costs of the efforts that will be necessary to complete the remainder of the development of current or future product candidates, or when, if ever, material net cash inflows may commence from product candidates. This uncertainty is due to the numerous risks and uncertainties associated with the duration and cost of clinical trials, which vary significantly over the life of a project as a result of many factors, including:

- delays in regulators or institutional review boards authorizing the Company or its investigators to commence our clinical trials, or in the Company's ability to negotiate agreements with clinical trial sites or CROs;
- the ability to secure adequate supply of product candidates for trials;
- the number of clinical sites included in the trials;

- the ability and the length of time required to enroll suitable patients;
- the number of patients that ultimately participate in the trials;
- the number of doses patients receive;
- any side effects associated with product candidates;
- the duration of patient follow-up;
- the results of clinical trials;
- significant and changing government regulations; and
- launching commercial sales of product candidates, if and when approved, whether alone or in collaboration with others.

The Company's expenditures are subject to additional uncertainties, including the terms and timing of regulatory approvals. The Company may never succeed in achieving regulatory approval for their product candidates.

The Company (Successor) may obtain unexpected results from clinical trials and may elect to discontinue, delay or modify clinical trials of product candidates. A change in the outcome of any of these variables with respect to the development of a product candidate could mean a significant change in the costs and timing associated with the development of that product candidate. For example, if the European Medicines Agency ("EMA"), FDA or other comparable regulatory authorities were to require the Company to conduct clinical trials beyond those that are currently anticipated, or if the Company experiences significant delays in enrollment in any clinical trials, the Company could be required to expend significant additional financial resources and time on the completion of clinical development. Product commercialization will take several years, and the Company expects to spend a significant amount in development costs.

Research and Development Tax Incentives

The Company participates in research tax incentive programs that are granted to companies by the United Kingdom and certain European tax authorities in order to encourage them to conduct technical and scientific research. Expenditures that meet the required criteria are eligible to receive a tax credit that is reimbursed in cash. Estimates of the amount of the cash refund expected to be received are determined at each reporting period and recorded as reductions to research and development expenses. We may not be able to continue to claim the most beneficial payable research and development tax credits in the future if we cease to qualify as a small or medium enterprise, based on size criteria concerning employee headcount, turnover and gross assets.

General and Administrative Expense

General and administrative expense consists primarily of personnel expenses, including salaries and benefits for employees in certain executive functions and share-based compensation. General and administrative expense also includes facility costs, including rent, utilities, depreciation and maintenance, not otherwise included in research and development expense, as well as legal fees related to intellectual property and corporate matters and fees for accounting and consulting services.

Change in Fair Value of Contingent Value Rights

Change in fair value of contingent value rights reflects the fair market value adjustment to the contingent value rights ("CVR") liability related to the achievement of a specified development milestone for Palladio's product candidate. In connection with the acquisition of the Centessa Subsidiaries, the Company (Successor) issued CVR to former shareholders and option holders of Palladio. The CVR represents the contractual rights to receive shares valued, in aggregate, at $39.7 million upon the first patient dosed in a Phase 3 pivotal study of lixivaptan for the treatment of ADPKD in any of the United States, France, Germany, Italy, Spain, the United Kingdom and Japan (designated the ACTION Study). The contingent CVR milestone will be settled through the issuance of Centessa ordinary shares equal to the amount of the total CVR payable based on the per share value of ordinary shares at the milestone date. The Company (Successor) determined that the CVR should be accounted for as a liability in accordance with ASC 480, *Distinguishing Liabilities from Equity*. Accordingly, the fair value of the contingent consideration is assessed quarterly until settlement.

Change in Fair Value of Derivative Liability

Change in fair value of derivative liability reflects the change in the fair value of the embedded redemption feature contained in the Centessa Predecessor's convertible term notes. As a result of the convertible notes being convertible into a variable number of shares of the Centessa Predecessor's preferred stock, this embedded redemption feature was bifurcated from the convertible debt at each issuance date and recorded at fair value. The derivative has been remeasured at each reporting period until settled. In connection with Centessa's acquisition of the Predecessor and concurrent Series A financing event in January 2021, the outstanding principal, interest and derivative liability were settled in their entirety and are no longer subject to remeasurement.

Amortization of Debt Discount

Amortization of debt discount primarily consists of the bifurcation of the embedded redemption feature associated with the Centessa Predecessor's convertible term notes. The debt discount was amortized over the life of the loans until they were settled in January 2021 and the Centessa Predecessor Group recognized all unamortized debt discount.

Interest (Expense) Income, net

Interest (expense) income primarily consists of interest costs related to the Note Purchase Agreement and interest costs related to Centessa Predecessor's convertible term notes, partially offset by interest income earned from the Company (Successor)'s and Predecessor's cash and cash equivalents.

Other (Expense) Income, net

Other (expense) income, net consists primarily of foreign currency transaction gains and losses, franchise tax expense as well as the change in fair value of the Note Purchase Agreement.

Foreign Currency Translation

The Company's financial statements are presented in U.S. dollars ("USD"), the reporting currency of the Company. The functional currency of Centessa Pharmaceuticals plc is USD and the functional currency of the Centessa Subsidiaries is their respective local currency. Income and expenses have been translated into USD at average monthly exchange rates prevailing during the period. Assets and liabilities have been translated at the rates of exchange on the balance sheets dates and equity accounts at their respective historical rates. The resulting translation gain and loss adjustments are recorded directly as a separate component of shareholders' equity as other comprehensive income (loss). Transactions denominated in a currency other than the functional currency are remeasured based upon the exchange rate at the date of remeasurement with the resulting gain or loss included in the accompanying consolidated and combined statements of operations and comprehensive loss within Other (expense) income, net.

The functional currency of Centessa Pharmaceuticals plc had previously been British pounds (GBP), as Centessa Pharmaceutical plc's primary activities during formation were mostly denominated in GBP, including related transaction costs, the acquisition of Centessa subsidiaries predominantly with operations in GBP and the issuance of shares with a GBP nominal value as consideration in the acquisition. Beginning in the second quarter of 2021, the functional currency of Centessa Pharmaceuticals plc changed from GBP to USD. The change in functional currency was the result of many factors including the completion of an IPO and receipt of proceeds in USD which resulted in USD denominated assets exceeding GBP denominated assets, the increase in the number of U.S.-based employees, and the increase in costs denominated in USD, following completion of the Company's IPO on a U.S. stock exchange (Nasdaq). Given these significant changes, the Company considered the economic factors outlined in ASC 830, *Foreign Currency Matters* and concluded that the majority of the factors supported the use of the USD as the functional currency for Centessa Pharmaceutical plc.

The change in functional currency for Centessa Pharmaceuticals plc was applied on a prospective basis beginning as of the second quarter of 2021 and translation adjustments for prior periods will continue to remain as a component of accumulated other comprehensive loss. The Company reclassified the presentation of foreign currency gains and losses recognized first quarter of 2021 from General & administration expense to Other income (expense), net to conform to the current period financial statement presentation.

Results of Operations

Company (Successor) and Centessa Predecessor Group

The following table sets forth the Company (Successor)'s results of operations for the period from January 30, 2021 through December 31, 2021 and the Centessa Predecessor Group's results of operations for the period from January 1, 2021 through January 29, 2021 and for the twelve month periods ended December 31, 2020 and December 31, 2019 (amounts in thousands):

	Successor	Predecessor		
	Period from January 30, 2021 through December 31, 2021	Period from January 1, 2021 through January 29, 2021	Twelve months ended December 31, 2020	Twelve months ended December 31, 2019
Operating expenses:				
Research and development	$ 95,660	$ 662	$ 9,301	$ 4,263
General and administrative	42,888	121	1,139	790
Change in fair value of contingent value rights	15,082	—	—	—
Acquired in-process research and development	220,454	—	—	—
Loss from operations	(374,084)	(783)	(10,440)	(5,053)
Interest (expense) income, net	(1,172)	(9)	(68)	5
Amortization of debt discount	—	(37)	(310)	(118)
Debt issuance costs	(1,331)	—	—	—
Other (expense) income, net	(4,370)	—	155	105
Loss before income taxes	(380,957)	(829)	(10,663)	(5,061)
Income tax expense	114	—	—	—
Net loss	$ (381,071)	$ (829)	$ (10,663)	$ (5,061)

Research and Development Expenses

The following table summarizes research and development expenses by program incurred for the following periods (amounts in thousands):

	Successor	Predecessor		
	Period from January 30, 2021 through December 31, 2021	Period from January 1, 2021 through January 29, 2021	Twelve months ended December 31, 2020	Twelve months ended December 31, 2019
Registrational				
Lixivaptan (Palladio)	$ 17,365	$ —	$ —	$ —
SerpinPC (ApcinteX)	2,926	—	—	—
Emerging				
OX2R (Orexia)	19,411	—	—	—
ZF874 (Z Factor)	8,577	323	3,121	1,294
LB101/LB201 (LockBody)	5,397	241	2,549	1,270
MGX292 (Morphogen-IX)	5,127	187	3,566	1,688
Exploratory				
CBS001/CBS004 (Capella)	6,275	—	—	—
Other deprioritized programs				
Imgatuzumab (Pega-One)	12,870	—	—	—
Dual-STAT3/5 (Janpix)	5,962	—	—	—
EGFR Exon20/C797S (PearlRiver)	2,857	—	—	—
Non-program specific costs:				
Personnel expenses	21,239	98	1,691	999
Research tax incentives	(13,839)	(222)	(2,199)	(1,287)
Other preclinical and clinical development expenses	1,493	35	573	299
	$ 95,660	$ 662	$ 9,301	$ 4,263

We categorize our current programs as registrational, emerging, or exploratory. Our R&D spend is commensurate with these three stages, with the highest spend on the programs that have already established clinical proof of concept. For programs in the earlier stages, we aim to implement capital-efficient plans to reach the next set of catalysts, gating more significant spending until after we obtain clinical proof of concept.

As part of ongoing portfolio management, we continuously review all of our programs with the goal of assembling a pipeline of product candidates with the potential to be first in class / best in class assets. We are not dependent on any one program or therapeutic area within our product portfolio. Our portfolio decisions reflect the responsibility of the management team to expeditiously evaluate and potentially increase resources or suspend development based on whether the product profile or data meet our criteria for further investment. In particular, we apply our criteria to each program individually and evaluate the merits of each program individually and not in comparison to other programs in our pipeline. As a result, we have recently determined to: (1) discontinue the small molecule epidermal growth factor receptor (EGFR) Exon20 insertion mutation inhibitor program and C797S mutation inhibitor program for the treatment of Non-Small Cell Lung Cancer (NSCLC); (2) evaluate strategic options including potential divestment for imgatuzumab, an anti-EGFR mAb; and (3) discontinue internal funding for the lead dual-STAT3/5 degrader program in Acute Myeloid Leukemia (AML).

Research and development expenses for the Company (Successor) for the period from January 30, 2021 through December 31, 2021 was $95.7 million and for the Centessa Predecessor Group during the period from January 1, 2021 through January 29, 2021 was $0.7 million, compared to the Centessa Predecessor Group for the twelve months ended December 31, 2020 of $9.3 million. The increase in 2021 is primarily attributable to the growth in the portfolio of product candidates under development following the acquisition of the Centessa Subsidiaries in January 2021 as well as increased spending in the Centessa Predecessor Group. Personnel expenses represent staffing costs, including share-based

compensation, for centralized as well as subsidiary-level teams that support program development efforts. The increase in personnel related expenses includes an increase in headcount and an increase in share-based compensation expense of $5.6 million, which is primarily attributable to the equity awards issued at the time of the acquisition and the subsequent issuances of awards through December 31, 2021. These increases were partially offset by an increase in research tax incentives earned as a result of the increase in qualified research and development expenses in 2021 when compared to 2020.

Research and development expenses for the year ended December 31, 2020 were $9.3 million, compared to $4.3 million for the year ended December 31, 2019. The increase of $5.0 million was primarily due to the increase in clinical development of activities and expenses for the product candidates. Costs associated with Z Factor's lead candidate, ZF874, increased $1.8 million from $1.3 million in 2019 to $3.1 million in 2020 as Z Factor initiated its Phase 1 clinical trial and dosed its first human patient in August 2020. Costs associated with LockBody's lead candidates, LB101 and LB201, increased $1.2 million in the aggregate from $1.3 million in 2019 to $2.5 million in 2020 as LockBody initiated its preclinical evaluation and cell line development for LB101 and lead optimization for LB201. Costs associated with Morphogen-IX's lead candidate, MGX292, increased $1.9 million from $1.7 million in 2019 to $3.6 million in 2020 and primarily attributable to ongoing preclinical development in preparation for submitting an investigational new drug application. Other research and development expenses increased $0.3 million from $0.3 million in 2019 to $0.6 million 2020 in connection with preclinical activities and discovery efforts for other programs. Personnel related expenses increased $0.7 million from $1.0 million in 2019 to $1.7 million in 2020 and was attributable to the increase in research and development employee headcount. These increases were partially offset by an increase in research tax incentives of $0.9 million earned as a result of the increase in qualified research and development expenses in 2020 when compared to 2019.

General and Administrative Expense

The following table summarizes the general and administrative expenses for the following periods (amounts in thousands):

	Successor	Predecessor		
	Period from January 30, 2021 through December 31, 2021	Period from January 1, 2021 through January 29, 2021	Twelve months ended December 31, 2020	Twelve months ended December 31, 2019
Personnel expenses	$ 17,858	$ —	$ 62	$ 46
Legal and professional fees	14,831	117	1,031	612
Other expenses	9,570	4	40	118
Facilities and supplies	629	—	6	14
	$ 42,888	$ 121	$ 1,139	$ 790

General and administrative expenses for the Company (Successor) for the period from January 30, 2021 through December 31, 2021 was $42.9 million and for the Centessa Predecessor Group during the period from January 1, 2021 through January 29, 2021 was $0.1 million, compared to the Centessa Predecessor Group for the twelve months ended December 31, 2020 of $1.1 million. The increase is primarily attributable to public company costs, the operating costs of Centessa Pharmaceuticals plc and Centessa Pharmaceutical Inc. including professional fees and personnel costs, and the increase in operating costs resulting from the acquired Centessa Subsidiaries. In addition, the increase in personnel related expenses includes an increase in headcount and an increase in share-based compensation expense of $9.0 million, which is primarily attributable to the immediate recognition of the certain replacement awards issued to the Centessa Subsidiaries' employees and consultants and the options granted through December 2021 by the Company (Successor).

General and administrative expenses for the year ended December 31, 2020 were $1.1 million, compared to $0.8 million for the year ended December 31, 2019. The increase of $0.3 million was primarily attributable to an increase in legal and professional fees of $0.4 million that were partially offset by a $78,000 decrease in other administrative expenses.

Acquired In-Process Research and Development

During the period from January 30, 2021 through December 31, 2021, the Company (Successor) recognized $220.5 million of expense associated with research and development projects of the Centessa Subsidiaries which were in-process with no alternative future use.

Change in Fair Value of CVR

The Company (Successor) recognized $15.1 million for the change in fair value of the contingent value right for the period from January 30, 2021 through December 31, 2021. The change was attributable to a fair market value adjustment from the initial fair value of $22.6 million at the date of acquisition of the Centessa subsidiaries in January 2021 to the fair value at December 31, 2021 of $37.7 million. On February 18, 2022, the milestone which triggers the CVR entitlement was achieved. See Note 13 - *"Subsequent Events"*.

Interest (Expense) Income, net and Debt Issuance Costs

Interest (expense) income, net for the Company (Successor) for the period from January 30, 2021 through December 31, 2021 was $(1.2) million, driven by interest expense from the issuance of the Note Purchase Agreement in October 2021, partially offset by interest earned on larger cash balances due to the Series A financing in January 2021 and the IPO in June 2021. Additionally, as the Company has elected to account for the Note Purchase Agreement under the fair value option, debt issuance costs of $1.3 million were immediately expensed.

Amortization of Debt Discount

Amortization of debt discount for the Centessa Predecessor Group was $37 thousand and $0.3 million during the period from January 1, 2021 through January 29, 2021 and for the twelve months ended December 31, 2020, respectively and was attributable to the convertible term loans. The loans were settled in January 2021 at which point all unamortized debt discounts were immediately recognized by the Centessa Predecessor Group.

The Predecessor Group recognized $0.1 million of amortization of debt discount for the year ended December 31, 2019 compared to $0.3 million for the year ended December 31, 2020. The $0.2 million increase is attributable to the additional principal borrowings in 2020 and related bifurcated redemption feature that was recorded as a debt discount and subsequently amortized.

Other (Expense) Income, net

Other (expense) income, net for the Company (Successor) for the period from January 30, 2021 through December 31, 2021 was $(4.4) million and was primarily attributable to foreign currency losses of $3.6 million resulting from in part to remeasuring the Company's USD cash and cash equivalents of Centessa Pharmaceutical plc to GBP in the first quarter of 2021. Additionally, other (expense) income included a $0.7 million loss related to remeasuring the Note Purchase agreement at fair value at December 31, 2021. Other (expense) income, net for the Centessa Predecessor Group for the period from January 1, 2021 through January 29, 2021 and for the twelve months ended December 31, 2020 was insignificant to the Group's results of operations.

Liquidity and Capital Resources

Sources of Liquidity

As of December 31, 2021, the Company had cash and cash equivalents of $595.1 million. Concurrent with the acquisition of the Centessa Subsidiaries by the Company (Successor) in January 2021, the Company (Successor) completed a $250.0 million Series A convertible preferred financing that was comprised of $245.0 million in proceeds and the $5.0 million conversion of a convertible debt instrument. In June 2021, the Company (Successor) completed its IPO and shortly after the close of the IPO, the underwriters exercised their option in full to purchase an additional 2,475,000 ADSs at the initial public offering price of $20.00 per ADS. The Company (Successor) received aggregate net proceeds of $344.1 million which includes the full exercise of the underwriters' option.

In October 2021, the Company entered into a financing agreement with funds managed by Oberland Capital, which provides the Company additional funds to further scale up our development activities and to enhance balance sheet flexibility for potential pipeline extension. Under the terms of the agreement, Oberland Capital will purchase up to $300.0 million of 6-year, interest-only (initial interest rate is 8.0% per annum), senior secured notes from the Company including

$75.0 million, funded on October 4, 2021, $125.0 million available in tranches of $75 million and $50 million within 24 months at the Company's option, and $100.0 million available to fund M&A, in-licensing, or other strategic transactions, at the option of the Company and Oberland Capital.

On February 11, 2022, Centessa Pharmaceuticals plc, as issuer, and certain of the Company's wholly owned subsidiaries, as guarantors (the "Guarantors"), entered into an Amendment to Note Purchase Agreement (the "Amendment") with Three Peaks Capital Solutions Aggregator Fund (the "Purchaser"), and Cocoon SA LLC (the "Purchaser Agent"), an affiliate of Oberland Capital Management LLC, as agent for the Purchaser to modify the Note Purchase Agreement (the "Note Purchase Agreement"), dated as of October 1, 2021 by and among the Company, the Guarantors, the Purchaser and the Purchaser Agent.

Under the terms of the Amendment, the Company acknowledged the existence of certain Events of Default, including the delivery by the Company of a landlord consent after the required delivery date of October 31, 2021 and the entry by a subsidiary of the Company into a Research Collaboration and License Agreement without the prior consent of Purchaser Agent; as well as other non-financial, administrative-related defaults. Under the Note Purchase Agreement, Events of Default may entitle the lenders to default interest, penalties and the ability to terminate the facility and to accelerate repayment of any outstanding loans in full. Pursuant to the Amendment, the lenders agreed to waive such Events of Default.

Pursuant to the Amendment, the Purchaser and the Purchaser Agent have also agreed to waive the requirement to obtain the consent of a certain licensee and waive certain of the insurance requirements contained in the Note Purchase Agreement. The Amendment also provides that the Company is required to maintain a cash balance in an amount equal to 75% of the aggregate outstanding principal amount of all issued Notes, as defined in the Note Purchase Agreement, that have been issued on and from February 11, 2022. Also pursuant to the Amendment, the date for the Third Purchase Date, as defined in the Note Purchase Agreement, and the Commitment Termination Date were extended to December 31, 2023. The Amendment also provides that upon the sale of any of the Company's or any of its subsidiary's assets, if the Purchaser Agent elects to have the Company repurchase the notes, such repurchase amounts will be subject to a $100 million deductible such that the Purchaser Agent will not collect any repurchase amounts until $100 million has been received by the Company from such sale event. In addition, the reduced payment cap that is triggered by the Purchaser Agent opting into a repayment in the event of an asset sale, extends to the second loan tranche, if drawn. The effectiveness of the Amendment is subject to certain conditions precedent and conditions subsequent.

The Company (Successor) has no other ongoing material financing commitments, such as lines of credit or guarantees, that are expected to affect liquidity over the next five years. The maturity date of the Oberland Capital Notes is October 4, 2027.

Cash Flow

Company (Successor) and Centessa Predecessor Group

The following table shows a summary of cash flows for the periods indicated (in thousands):

	Successor	Predecessor		
	Period from January 30, 2021 through December 31, 2021	Period from January 1, 2021 through January 29, 2021	Twelve months ended December 31, 2020	Twelve months ended December 31, 2019
Net cash (used in) provided by:				
Operating activities	$ (135,109)	$ (1,049)	$ (10,630)	$ (5,825)
Investing activities	63,256	—	—	—
Financing activities	660,147	—	1,362	9,005
Exchange rate effect on cash and cash equivalents	1,822	80	(75)	520
Net increase (decrease) in cash and cash equivalents	$ 590,116	$ (969)	$ (9,343)	$ 3,700

Operating Activities

During the period from January 30, 2021 through December 31, 2021, the Company (Successor) used $135.1 million of cash in operating activities. Cash used in operating activities reflected a net loss of $381.1 million, offset by a

$220.5 million non-cash charge for acquired in-process research and development in connection with the acquisition of the Centessa Subsidiaries, $15.8 million in a non-cash change in fair value of contingent value rights and debt, $14.9 million in non-cash share-based compensation expense, and a $(5.8) million net change in operating assets and liabilities.

During the period from January 1, 2021 through January 29, 2021, the Centessa Predecessor Group used $1.0 million of net cash in operating activities. Cash used in operating activities reflected the net loss of $0.8 million and $(0.2) million net change in operating assets and liabilities.

During the year ended December 31, 2020, the Centessa Predecessor Group used $10.6 million of net cash in operating activities. Cash used in operating activities reflected a net loss of $10.7 million and $0.3 million non-cash gains in connection with the extinguishment of debt and the change in fair value of the derivative liability. The Centessa Predecessor Group also used cash of $0.5 million related to the change in operating assets. These uses were offset by $0.9 million in non-cash charges associated with non-cash interest and share-based compensation expense.

During the year ended December 31, 2019, the Centessa Predecessor Group used $5.8 million of net cash in operating activities. Cash used in operating activities reflected the net loss of $5.1 million and $0.1 million non-cash gains in connection with the extinguishment of debt. The Centessa Predecessor Group also used cash of $1.1 million related to the change in operating assets that were offset by $0.4 million in non-cash charges for non-cash interest expense, depreciation expense and share-based compensation expense.

Investing Activities

During the period from January 30, 2021 through December 31, 2021, net cash provided by investing activities for the Company (Successor) was $63.3 million and is primarily attributable to $68.0 million of cash acquired in connection with the acquisition of the Centessa Subsidiaries, which was partially offset by the related $4.6 million of transaction costs paid during the period and $0.2 million in purchases of property and equipment.

Financing Activities

During the period from January 30, 2021 through December 31, 2021 financing activities for the Company (Successor) provided $660.1 million in net cash proceeds and is primarily attributable to the sale of the Company (Successor)'s Series A preferred shares in January 2021, the IPO in June 2021, and the issuance of debt in October 2021, net of issuance costs. The Company (Successor) also received $0.8 million in proceeds upon the exercise of stock options.

During the year ended December 31, 2020, financing activities for the Centessa Predecessor Group provided $1.4 million in net cash proceeds, primarily attributable to proceeds from convertible debt issuances. During the year ended December 31, 2019, financing activities provided $9.0 million in net cash proceeds and attributable to $3.8 million upon the issuance of convertible debt and $5.2 million upon the sale and issuance of Series A convertible preferred shares.

Funding Requirements

Following the acquisition of the Centessa Subsidiaries in January 2021, the Company expects expenses to increase in connection with ongoing activities, particularly as the Company continues the research and development of, continues or initiates clinical trials of, and seeks marketing approval for any current and future product candidates. In addition, if marketing approval is obtained for any product candidates, the Company expects to incur significant commercialization expenses related to product sales, marketing, manufacturing and distribution. Furthermore, following the completion of our IPO, additional costs associated with operating as a public company are expected. Accordingly, there will be a need to obtain substantial additional funding in connection with the continuing operations. If the Company is unable to raise capital when needed or on attractive terms, it would be forced to delay, reduce or eliminate research and development programs or future commercialization efforts.

The Company anticipates that its expenses will increase substantially as it:

- seeks to discover and develop current and future clinical and preclinical product candidates;
- scales up clinical and regulatory capabilities;
- adapts regulatory compliance efforts to incorporate requirements applicable to marketed products;
- establishes a sales, marketing and distribution infrastructure and scale up external manufacturing capabilities to commercialize any product candidates for which regulatory approval may be obtained;

- maintains, expands and protects the intellectual property portfolio;
- hires additional internal or external clinical, manufacturing and scientific personnel or consultants;
- adds operational, financial and management information systems and personnel, including personnel to support product development efforts; and
- incurs additional legal, accounting and other expenses in operating as a public company.

Because of the numerous risks and uncertainties associated research, development and commercialization of product candidates, the Company is unable to estimate the exact amount of its working capital requirements. Future funding requirements will depend on and could increase significantly as a result of many factors, including:

- the scope, progress, results and costs of preclinical studies and clinical trials;
- the scope, prioritization and number of research and development programs;
- the costs, timing and outcome of regulatory review of product candidates;
- the ability to establish and maintain collaborations on favorable terms, if at all;
- the extent to which obligations to reimburse exist, or entitled to reimbursement of, clinical trial costs under collaboration agreements, if any;
- the costs of preparing, filing and prosecuting patent applications, maintaining and enforcing intellectual property rights and defending intellectual property-related claims;
- the costs of securing manufacturing arrangements for commercial production; and
- the costs of establishing or contracting for sales and marketing capabilities if regulatory approvals are obtained to market product candidates.

Identifying potential product candidates and conducting preclinical studies and clinical trials is a time- consuming, expensive and uncertain process that takes many years to complete, and may never generate the necessary data or results required to obtain marketing approval and achieve product sales. In addition, product candidates, if approved, may not achieve commercial success. Commercial revenues, if any, will be derived from sales of product candidates that do not expect to be commercially available for the next couple of years, if at all. Accordingly, the need to continue to rely on additional financing to achieve our business objectives will exist. Adequate additional financing may not be available on acceptable terms, or at all.

Contractual Obligations and Other Commitments

As of December 31, 2021, other than what has been disclosed in Note 7 – "Commitment and contingencies" and Note 6 - "Debt", we had no material contractual obligations and other commitments associated with contracts that are enforceable and legally binding and that specify all significant terms, including fixed or minimum services to be used, fixed, minimum or variable price provisions, and the approximate timing of the actions under the contracts. On February 7, 2022, the Company entered into a 10-year office lease for its new corporate headquarters in Boston, Massachusetts. The fixed annual rent will be approximately $1.6 million in 2023 and will escalate to approximately $1.9 million in Year 10.

The Company has entered into collaborative arrangements to develop and commercialize intellectual property. These arrangements typically involve two (or more) parties who are active participants in the collaboration and are exposed to significant risks and rewards dependent on the commercial success of the activities. These collaborations usually involve various activities by one or more parties, including research and development, marketing and selling and distribution. Often, these collaborations require upfront, milestone and royalty or profit share payments, contingent upon the occurrence of certain future events linked to the success of the asset in development. Amounts due to collaborative partners related to development activities are generally reflected as research and development expenses. See Note 10 - "Licensing Arrangements" as well as "*Intellectual Property and License Agreements*" in Item 1. Business of this Form 10-K for additional information on these arrangements.

The contractual obligations we have disclosed do not include any potential development, regulatory and commercial milestone payments and potential royalty payments that we may be required to make under the various license agreements entered into by the Centessa Subsidiaries and collaboration agreement. We excluded these payments given that the timing of any such payments cannot be reasonably estimated at this time.

In connection with our acquisition of the Centessa Subsidiaries in January 2021, we issued contingent value rights, or CVR, to former shareholders and option holders of Palladio. In total, the CVR represent the contractual rights to receive shares valued, in aggregate, at $39.7 million upon the dosing of the first patient in commencement of the ACTION study, a pivotal Phase 3 clinical trial of lixivaptan for the treatment of Polycystic Kidney Disease in any of the United States, France, Germany, Italy, Spain, the United Kingdom and Japan.

On February 18, 2022, the Company commenced dosing in its pivotal Phase 3 clinical trial evaluating lixivaptan as a potential treatment for ADPKD. Such event was the milestone trigger for payment of contingent value rights originally issued to the former shareholders and option holders of the Company's subsidiary, Palladio Biosciences, Inc., in connection with its acquisition by Centessa in January 2021. The contingent value rights entitled such holders to a number of ordinary shares of the Company (including in the form of ADSs) in an aggregate amount of approximately $39.7 million based on the Volume Weighted Average Price of the Company's ADSs over the five day trading period ending on the date of the milestone trigger. On March 8, 2022, the Company and the representative of the contingent value rights holders agreed that 3,938,423 represents the aggregate number of ordinary shares, issued as ADSs, to be issued in satisfaction of such contingent value rights, to the former shareholders and option holders of Palladio Biosciences, Inc. The number of ADSs issued to employee recipients reflected in this figure is net of tax withholding, which the Company satisfied with cash payments to tax authorities. The ADSs were issued in exchange for the previously-issued contingent value rights of the Company. The Company will recognize a remaining adjustment of fair value (approximately a $2 million charge) in its consolidated statement of operations and comprehensive loss in its first quarter of 2022.

Incentivization Agreements

In January 2021, we established incentivization arrangements pursuant to which certain members of the senior management teams of each predecessor entity are eligible to earn certain payments based on the attainment of corresponding milestone performance by and/or an exit event of such predecessor entity, as applicable to each executive. As defined in the incentivization agreements, an "exit event" includes the sale or disposition of all or substantially all of the applicable subsidiary's commercially valuable assets or any sale or disposition of the applicable subsidiary's equity which results in the purchaser of the equity acquiring a controlling interest in the applicable subsidiary. Milestones may include the designation of a product candidate or the attainment of approvals, licenses, permits, certifications registrations or authorizations necessary for the sale of a particular product candidate or related molecules in the United States, France, Germany, Italy, Spain or the United Kingdom. The milestone payment amount for each subsidiary is in the low eight figure range to be divided among the members of the respective subsidiary's senior management team and employees according to the terms of its respective incentivization agreement. Any milestone payment earned will be payable in a lump sum within twenty (20) days after attainment of the milestone. In addition, if a sale of a controlling interest in a subsidiary or sale (or grant of an exclusive license) of its respective product candidate occurs prior to attainment of the milestone or within the three (3) year period following attainment of the milestone, an exit payment equal in the range of single digit to low teens percentage of the sales proceeds less any amounts previously paid as a milestone payment (if any) and any fees, costs and expenses of the sale (excluding any earn out, milestone, royalty payment or other contingent payments but including any escrow, holdback or similar amount) will become due and payable to certain employees and members of the subsidiary's senior management team. To the extent an exit event occurs following the occurrence of an adverse event (which includes the failure to achieve milestones within the specified time period), no exit payment will become due unless sale proceeds are in excess of an amount in the eight-figure range.

The incentivization agreements contain standard termination provisions providing that the agreements shall terminate upon the occurrence of certain events, or automatically on December 31, 2035. Other events that may trigger termination include:

- an exit event;
- the occurrence of certain asset sales in conjunction with certain milestones; and
- the date that is three years following achievement of certain milestones.

Critical Accounting Policies

Management's discussion and analysis of its financial condition and results of operations is based on the consolidated and combined financial statements of the Company (Successor) and Centessa Predecessor Group which have been prepared in accordance with U.S. generally accepted accounting principles. The preparation of these financial statements requires estimates and judgments be made that affect the reported amounts of assets, liabilities, and expenses and the disclosure of contingent assets and liabilities in the combined financial statements. On an ongoing basis, an evaluation of estimates and judgments are required, including those related to accrued expenses, contingent consideration

and share-based compensation. Estimates are based on historical experience, known trends and events, and various other factors that are believed to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates under different assumptions or conditions.

While the significant accounting policies are described in more detail in Note 2 to the Company (Successor)'s consolidated and the Group's combined financial statements, the following accounting policies are the most critical to the judgments and estimates used in the preparation of the financial statements.

Research and Development Accruals

Research and development expenses consist primarily of costs incurred in connection with the development of product candidates. Research and development costs are expensed as incurred.

Expenses for preclinical studies and clinical trial activities performed by third parties are accrued based upon estimates of the proportion of work completed over the term of the individual trial and patient enrollment rates in accordance with agreements with CROs and clinical trial sites. Estimates are determined by reviewing external service providers as to the progress or stage of completion of trials or services and the agreed-upon fee to be paid for such services. However, actual costs and timing of clinical trials are highly uncertain, subject to risks and may change depending upon a number of factors, including the clinical development plan.

Estimates of accrued expenses are made as of each balance sheet date in the financial statements based on facts and circumstances known at that time. If the actual timing of the performance of services or the level of effort varies from the estimate, an adjustment to the accrual will be made accordingly. Nonrefundable advance payments for goods and services, including fees for process development or manufacturing and distribution of clinical supplies that will be used in future research and development activities, are recognized as expense in the period that the related goods are consumed or services are performed.

Milestone payments within the Company (Successor)'s licensing arrangements are recognized when achievement of the milestone is deemed probable to occur. To the extent products are commercialized and future economic benefit has been established, commercial milestones that become probable are capitalized and amortized over the estimated remaining useful life of the intellectual property. In addition, royalty expenses would be accrued and sublicense non-royalty payments, as applicable, for the amount it is obligated to pay, with adjustments as sales are made.

Contingent Value Rights

In connection with the acquisition of Palladio, the Company (Successor) issued contingent value rights, or CVR, to former shareholders and option holders of Palladio. In total, the CVR represent the contractual rights to receive shares valued, in aggregate, at $39.7 million upon the first patient dosed in a Phase 3 pivotal study of lixivaptan for the treatment of ADPKD in any of the United States, France, Germany, Italy, Spain, the United Kingdom and Japan (designated the ACTION Study). This contingent milestone was triggered in February 2022 and will be settled in 2022 through the issuance of the Company (Successor)'s ordinary shares equal to the amount of the total CVR payable based on the per share value of ordinary shares at the milestone date.

The Company (Successor) determined that the contingent value rights should be accounted for as a liability in accordance with ASC 480, *Distinguishing Liabilities from Equity*. Accordingly, fair value of the contingent consideration is assessed quarterly until settlement. To estimate the fair value of the CVR, the Company (Successor) applies a cumulative probability of achieving the clinical milestone and applied it to the potential payout.

Note Purchase Agreement

As described in further detail in Note 6 - "Debt," in October 2021, the Company entered into a Note Purchase Agreement (the "Notes") with Oberland Capital Management LLC (Oberland Capital). Under the terms of the agreement, amended, Oberland Capital will purchase up to $300.0 million of 6-year, interest-only (initial interest rate is 8.0% per annum), senior secured notes (the Notes) from the Company including $75.0 million, funded on October 4, 2021, $125.0 million available within 24 months at the Company's option, and $100.0 million available to fund Mergers and Acquisitions ("M&A"), in-licensing, or other strategic transactions, at the option of the Company and Oberland Capital. In addition to interest payments on the principal, the Company is obligated to pay certain Revenue Participation payments, starting on the date of the first commercial sale of lixivaptan, currently a product candidate under development by the Company, and ending on the tenth anniversary of the First Purchase Date; as well as obligated to pay a Milestone payment

equal to 30% of the aggregate principal amount issued under the Notes by the Company upon regulatory approval of any drug candidate.

The Company evaluated the notes and determined that the notes include embedded derivatives that would otherwise require bifurcation as derivative liabilities. Neither the debt instrument nor any embedded features are required to be classified as equity. Therefore, the hybrid financial instrument comprised of the debt host and the embedded derivative liability may be accounted for under the fair value option. The Company elected to carry the Notes at fair value, and the debt instrument is outside the scope of ASC 480, *Distinguishing Liabilities from Equity*, and thus will be classified as a liability under ASC 470, *Debt*, in the Company's financial statements. As the Company has elected to account for the Notes under the fair value option, debt issuance costs were immediately expensed.

The fair value of the Note Purchase Agreement represents the present value of estimated future payments, including interest, principal as well as estimated payments that are contingent upon the achievement of specified milestones. The fair value of the notes is based on the cumulative probability of the various estimated payments. The fair value measurement is based on significant Level 3 unobservable inputs such as the probability of achieving the milestones, anticipated timelines, probability and timing of an early redemption of all obligations under the agreement and discount rate. Any changes in the fair value of the liability are recognized in the consolidated statement of operations and comprehensive loss until it is settled.

Share-Based Compensation

The Company (Successor) and the Predecessor measure share-based awards at their grant-date fair value and record compensation expense on a straight-line basis over the vesting period of the awards. Following the completion of our IPO, the fair value of our ordinary shares was determined based on the quoted market price of our ADSs representing our ordinary shares. The Company (Successor) and the Predecessor Group account for forfeitures of stock option awards as they occur.

The Company uses the Black-Scholes option pricing model to value its stock option awards. The expected life of the stock options is estimated using the "simplified method," as the Company has limited historical information from which to develop reasonable expectations about future exercise patterns and post-vesting employment termination behavior for its stock option grants. The simplified method is the midpoint between the vesting period and the contractual term of the option. For share price volatility, the Company uses comparable public companies as a basis for its expected volatility to calculate the fair value of option grants. The risk-free rate is based on the U.S. Treasury yield curve commensurate with the expected life of the option. Forfeitures of stock options are recognized in the period the forfeiture occurs.

As there was no public market for our ordinary shares prior to the IPO, the estimated fair value of our ordinary shares has been determined by our board of directors as of the date of each option grant, with input from management, considering third-party valuations of our ordinary shares, which were performed contemporaneously with events which management believed would have an impact on the valuation of our ordinary shares. Our board of directors considered various objective and subjective factors, along with input from management, to determine the fair value of our ordinary shares, including:

- our nascent stage of development and business strategy, including the status of research and development efforts of its product candidates and the material risks related to its business and industry;
- our results of operations and financial position, including our levels of available capital resources;
- the valuation of publicly traded companies in the life sciences and biotechnology sectors, as well as recently completed mergers and acquisitions of peer companies;
- the lack of marketability of our ordinary shares as a private company;
- the most recent price of our convertible preferred shares sold to investors in arm's length transactions and the rights, preferences and privileges of our convertible preferred shares relative to those of our ordinary shares;
- the likelihood of achieving a liquidity event for the holders of our ordinary shares, such as an initial public offering or a sale of our, given prevailing market conditions;
- trends and developments in our industry; and
- external market conditions affecting the life sciences and biotechnology industry sectors.

The third-party valuations of our ordinary shares that our board of directors considered in making its determinations were performed in accordance with the guidance outlined in the "Practice Guide", which prescribes several valuation approaches for determining the value of an enterprise, such as cost, market and income approaches, and various methodologies for allocating the value of an enterprise to its capital structure and specifically the ordinary shares.

Recent Accounting Pronouncements

A description of recently issued accounting pronouncements that may potentially impact our financial position and results of operations is disclosed in Note 2, "Summary of Significant Accounting Policies" in our consolidated financial statements included elsewhere in this Annual Report.

Item 7A. Quantitative and Qualitative Disclosures About Market Risk

We are and will be exposed to a variety of market risks, which include the following:

Interest rate risk

Interest-earning assets consist of cash and cash equivalents. Interest income earned on these assets was $0.3 million for the period from January 30, 2021 through December 31, 2021. A hypothetical 10% change in market interest rates would not have a material impact on our financial statements.

We also have interest rate exposure as a result of the Oberland Facility. As of December 31, 2021, we had $75.7 million in debt outstanding under the Oberland Facility. Interest on this debt is payable quarterly during the term of the Notes at a rate per annum equal to the sum of (a) the greater of (i) LIBOR (which may be subject to replacement as contemplated by the Note Purchase Agreement) and (ii) 0.25% and (b) 7.75% (which percentage is subject to adjustment as described in the Note Purchase Agreement); provided that the interest rate shall never be less than 8.00%. The initial interest rate for the Notes is 8.00% per annum. Changes in the LIBOR rate (or its replacement) may therefore affect our interest expense associated with the loans. An increase of 100 basis points from the initial interest rate would increase expense by approximately $750k annually based on the amounts currently outstanding and would not materially affect our results of operations.

Other Market risks

The Company is also subject to both Foreign currency risk and Inflation risk, which could result in higher costs for its research and development efforts. Foreign currency exposures arise from transactions denominated in a currency other than our functional currency, US dollars. Approximately 48% of our cash-based costs are denominated in a currency other than the US dollar, predominately denominated in GBP and in the Euro.

Item 8. Financial Statements

Report of Independent Registered Public Accounting Firm

To the Shareholders and Board of Directors
Centessa Pharmaceuticals plc:

Opinion on the Consolidated and Combined Financial Statements

We have audited the accompanying consolidated balance sheet of Centessa Pharmaceuticals plc and subsidiaries (the Company) as of December 31, 2021, the related consolidated statements of operations and comprehensive loss, shareholders' equity, and cash flows for the period January 30, 2021 through December 31, 2021, the accompanying combined balance sheet of the Centessa Predecessor Group (consisting of Z Factor Limited, LockBody Therapeutics Ltd, and Morphogen-IX Limited) (the Group) as of December 31, 2020, the related combined statements of operations and comprehensive loss, convertible preferred shares and combined deficit, and cash flows for the period January 1, 2021 through January 29, 2021 and the years ended December 31, 2020 and 2019, and the related notes (collectively, the consolidated and combined financial statements). In our opinion, the consolidated and combined financial statements present fairly, in all material respects, the financial position of the Company and the Group as of December 31, 2021 and 2020, and the results of their operations and their cash flows for each of the respective periods in the three-year period ended December 31, 2021, in conformity with U.S. generally accepted accounting principles.

Basis for Opinion

These consolidated and combined financial statements are the responsibility of the Company's and the Group's management. Our responsibility is to express an opinion on these consolidated and combined financial statements based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company and the Group in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated and combined financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the consolidated and combined financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated and combined financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated and combined financial statements. We believe that our audits provide a reasonable basis for our opinion.

/s/ KPMG LLP

We have served as the Company's and the Group's auditor since 2021.

Boston, Massachusetts
March 30, 2022

Centessa Pharmaceuticals plc (Successor) and Centessa Predecessor Group (Predecessor)
Consolidated and Combined Balance Sheets
(amounts in thousands except share and per share data)

	Successor	Predecessor
	December 31, 2021	December 31, 2020
Assets		
Current assets:		
Cash and cash equivalents	$ 595,082	$ 7,227
Tax incentive receivable	15,392	2,633
Prepaid expenses and other current assets	18,300	1,305
Total current assets	628,774	11,165
Property and equipment, net	162	—
Other non-current assets	699	552
Total assets	$ 629,635	$ 11,717
Liabilities, convertible preferred shares, shareholders' equity and combined deficit		
Current liabilities:		
Accounts payable	$ 8,065	$ 1,032
Accrued expenses and other current liabilities	16,573	1,047
Convertible term notes	—	5,339
Term loans	—	288
Derivative liability	—	913
Total current liabilities	24,638	8,619
Long term debt	75,700	—
Contingent value rights	37,700	—
Other non-current liabilities	43	—
Total liabilities	138,081	8,619
Commitments and contingencies (Note 7)		
Convertible preferred shares (£0.0001 nominal value): No shares authorized, issued and outstanding at December 31, 2021; 6,549,205 shares issued and outstanding at December 31, 2020	—	25,521
Shareholders' equity and combined deficit:		
Series A convertible preferred shares: £0.002 nominal value: 22,840,902 shares authorized. No shares issued and outstanding	—	—
Ordinary shares: £0.002 nominal value: 152,500,000 shares authorized; 89,988,228 shares issued and outstanding at December 31, 2021; No shares authorized, issued and outstanding at December 31, 2020	252	—
Additional paid-in capital	876,267	—
Accumulated other comprehensive income	688	—
Accumulated deficit	(385,653)	—
Combined deficit	—	(22,423)
Total shareholders' equity and combined deficit	491,554	(22,423)
Total liabilities, convertible preferred shares, shareholders' equity and combined deficit	$ 629,635	$ 11,717

The accompanying notes are an integral part of these consolidated and combined financial statements.

Centessa Pharmaceuticals plc (Successor) and Centessa Predecessor Group (Predecessor)
Consolidated and Combined Statements of Operations and Comprehensive Loss
(amounts in thousands except share and per share data)

	Successor	Predecessor		
	Period from January 30, 2021 through December 31, 2021	Period from January 1, 2021 through January 29, 2021	Twelve months ended December 31, 2020	Twelve months ended December 31, 2019
Operating expenses:				
Research and development	$ 95,660	$ 662	$ 9,301	$ 4,263
General and administrative	42,888	121	1,139	790
Change in fair value of contingent value rights	15,082	—	—	—
Acquired in-process research and development	220,454	—	—	—
Loss from operations	(374,084)	(783)	(10,440)	(5,053)
Interest (expense) income, net	(1,172)	(9)	(68)	5
Amortization of debt discount	—	(37)	(310)	(118)
Debt issuance costs	(1,331)	—	—	—
Other (expense) income, net	(4,370)	—	155	105
Loss before income taxes	(380,957)	(829)	(10,663)	(5,061)
Income tax expense	114	—	—	—
Net loss	(381,071)	(829)	(10,663)	(5,061)
Other comprehensive income (loss):				
Foreign currency translation adjustment	778	107	(240)	412
Total comprehensive loss	$ (380,293)	$ (722)	$ (10,903)	$ (4,649)
Net loss per ordinary share - basic and diluted	$ (5.07)			
Weighted average ordinary shares outstanding - basic and diluted	75,166,456			

The accompanying notes are an integral part of these consolidated and combined financial statements.

Centessa Pharmaceuticals plc (Successor)
Consolidated Statement of Shareholders' Equity
(amounts in thousands except share data)

	Series A preferred		Ordinary shares		Additional paid-in capital	Accumulated other comprehensive income (loss)	Accumulated deficit	Total
	Shares	Amount	Shares	Amount				
Balance at January 30, 2021	**—**	**$ —**	**7,500,000**	**$ 21**	**$ —**	**$ (90)**	**$ (4,582)**	**$ (4,651)**
Sale of Series A convertible preferred shares, net of issuance costs of $3.4 million	22,272,721	241,597	—	—	—	—	—	241,597
Issuance of Series A convertible preferred shares upon conversion of debt	568,181	6,250	—	—	—	—	—	6,250
Acquisition of Centessa Subsidiaries	—	—	44,758,079	123	262,575	—	—	262,698
Forgiveness of convertible term loan	—	—	—	—	6,199	—	—	6,199
Repurchase of ordinary shares concurrent with acquisition of Centessa Subsidiaries	—	—	(4,450,000)	(12)	—	—	—	(12)
Sale of ordinary shares in connection with initial public offering, net of issuance costs of $8.8 million	—	—	16,500,000	47	298,030	—	—	298,077
Sale of ordinary shares in connection with underwriters exercise of option to purchase in full following initial public offering	—	—	2,475,000	7	46,052	—	—	46,059
Conversion of Series A convertible preferred shares into ordinary shares	(22,840,902)	(247,847)	22,840,902	65	247,782	—	—	—
Stock option exercises	—	—	133,389	—	779	—	—	779
Share-based compensation expense	—	—			14,851	—	—	14,851
Vesting of ordinary shares	—	—	230,858	1	(1)	—	—	—
Foreign currency translation adjustments	—	—	—	—	—	778	—	778
Net loss	—	—	—	—	—	—	(381,071)	(381,071)
Balance at December 31, 2021	**—**	**$ —**	**89,988,228**	**$ 252**	**$ 876,267**	**$ 688**	**$ (385,653)**	**$ 491,554**

The accompanying notes are an integral part of these consolidated and combined financial statements.

Centessa Predecessor Group (Predecessor)
Combined Statements of Convertible Preferred Shares and Combined Deficit
(amounts in thousands except share data)

	Convertible preferred shares						Combined Deficit
	Series A		Series B		Series Seed		
	Shares	Amount	Shares	Amount	Shares	Amount	
Balance at January 1, 2019	**3,670,620**	**$ 8,161**	**1,111,923**	**$ 10,840**	**1,100,000**	**$ 1,352**	**$ (7,450)**
Sale of Series A preferred shares	666,662	5,168	—	—	—	—	—
Share-based compensation expense	—	—	—	—	—	—	236
Foreign currency translation adjustments	—	—	—	—	—	—	412
Net loss	—	—	—	—	—	—	(5,061)
Net equity contributions	—	—	—	—	—	—	6
Balance at December 31, 2019	**4,337,282**	**$ 13,329**	**1,111,923**	**$ 10,840**	**1,100,000**	**$ 1,352**	**$ (11,857)**
Share-based compensation expense	—	—	—	—	—	—	336
Foreign currency translation adjustments	—	—	—	—	—	—	(240)
Net loss	—	—	—	—	—	—	(10,663)
Net equity contributions	—	—	—	—	—	—	1
Balance at December 31, 2020	**4,337,282**	**$ 13,329**	**1,111,923**	**$ 10,840**	**1,100,000**	**$ 1,352**	**$ (22,423)**
Foreign currency translation adjustments	—	—	—	—	—	—	107
Net loss	—	—	—	—	—	—	(829)
Balance at January 29, 2021	**4,337,282**	**$ 13,329**	**1,111,923**	**$ 10,840**	**1,100,000**	**$ 1,352**	**$ (23,145)**

The accompanying notes are an integral part of these consolidated and combined financial statements.

Centessa Pharmaceuticals plc (Successor) and Centessa Predecessor Group (Predecessor)
Consolidated and Combined Statements of Cash Flows

(amounts in thousands)

	Successor	Predecessor		
	Period from January 30, 2021 through December 31, 2021	Period from January 1, 2021 through January 29, 2021	Twelve months ended December 31, 2020	Twelve months ended December 31, 2019
Cash flows from operating activities:				
Net loss	$ (381,071)	$ (829)	$ (10,663)	$ (5,061)
Adjustments to reconcile net loss to net cash used in operating activities:				
Acquired in-process research and development	220,454	—	—	—
Share-based compensation expense	14,851	—	336	236
Depreciation and amortization	34	—	—	6
Change in fair value of financial instruments	15,782	—	186	—
Changes in operating assets and liabilities:				
Tax incentive receivable	(6,796)	74	(1,456)	(647)
Prepaid expenses and other assets	(16,164)	681	306	(1,397)
Accounts payable	4,157	(358)	(49)	855
Accrued expenses and other liabilities	12,968	(589)	653	123
Other, net	676	(28)	57	60
Net cash used in operating activities	(135,109)	(1,049)	(10,630)	(5,825)
Cash flows from investing activities:				
Cash acquired upon acquisition of Centessa Subsidiaries	68,038	—	—	—
Cash paid to acquire in-process research and development	(4,596)	—	—	—
Purchase of property and equipment	(186)	—	—	—
Net cash provided by investing activities	63,256	—	—	—
Cash flows from financing activities:				
Proceeds from the sale of convertible preferred shares, net of issuance costs	241,597	—	—	5,168
Proceeds from the sale of ordinary shares in connection with initial public offering, net of issuance costs paid in cash	344,136	—	—	—
Proceeds from issuance of debt, net of issuance costs	73,930	—	1,361	3,831
Repurchase of ordinary shares	(12)		—	—
Repayment of related party loan	(283)	—	—	—
Proceeds from option exercises	779	—	—	—
Other, net	—	—	1	6
Net cash provided by financing activities	660,147	—	1,362	9,005
Effect of exchange rate on cash and cash equivalents	1,822	80	(75)	520
Net increase (decrease) in cash and cash equivalents	590,116	(969)	(9,343)	3,700
Cash and cash equivalents at beginning of period	4,966	7,227	16,570	12,870
Cash and cash equivalents at end of period	$ 595,082	$ 6,258	$ 7,227	$ 16,570
Supplemental disclosure:				
Interest paid	$ 1,483	$ —	$ —	$ —
Non-cash investing and financing activities:				
Issuance of ordinary shares upon acquisition of Centessa Subsidiaries	$ 262,698	$ —	$ —	$ —
Issuance of contingent value rights upon acquisition of Centessa Subsidiaries	$ 22,618	$ —	$ —	$ —
Issuance of Series A convertible preferred shares upon conversion of debt	$ 6,250	$ —	$ —	$ —
Forgiveness of convertible term loan	$ 6,199	$ —	$ —	$ —
Unpaid debt issuance costs at December 31, 2021	$ 261	$ —	$ —	$ —

The accompanying notes are an integral part of these consolidated and combined financial statements.

1. Organization and Description of Business

Centessa Pharmaceuticals plc ("Centessa" or "the Company") is a clinical-stage pharmaceutical company with a Research & Development ("R&D") innovation engine that aims to discover, develop and ultimately deliver impactful medicines to patients. Centessa was incorporated on October 26, 2020 as a limited liability company under the laws of England and Wales. In connection with the IPO, we re-registered Centessa Pharmaceuticals Limited as an English public limited company and renamed it as Centessa Pharmaceuticals plc.

In January 2021, the management and equity holders of ApcinteX Limited, Capella Biosciences Limited, Inexia Limited, Janpix Limited, LockBody Therapeutics Ltd, Morphogen-IX Limited, Orexia Limited, Palladio Biosciences, Inc., PearlRiver Bio GmbH, Pega-One S.A.S., and Z Factor Limited (together, the "Centessa Subsidiaries"), contributed the Centessa Subsidiaries to Centessa, in a share for share exchange, after which these companies became wholly-owned subsidiaries of Centessa.

As the Company had no significant operations prior to the contribution of the Centessa Subsidiaries, and the registrant was required to present two years of historical financial statements in its prospectus filed with the SEC on June 2, 2021, the Company's management ("Management") sought to identify a predecessor, for which it could include audited historical financial statements, to satisfy the filing requirement. As such, Management sought to identify the predecessor from the population of portfolio companies, which would represent a sizable portion of the historical results of the entities later contributed to Centessa.

Entities affiliated with Medicxi manage multiple investment funds, including – Medicxi Ventures I LP, Medicxi Growth I LP, and Medicxi Secondary I LP. In addition, entities affiliated with Medicxi act as sub advisors to Index Ventures Life VI (Jersey) Limited which advises the managing general partner of Index Ventures Life VI (Jersey), L.P. (all funds collectively are referred to as the "Funds"). Management determined the companies owned by Index Ventures Life VI (Jersey), LP individually represent some of the earliest investments by the Funds. These companies (together, the "Centessa Predecessor Group" or the "Group") are:

- Z Factor Limited ("Z Factor")
- LockBody Therapeutics Ltd ("LockBody")
- Morphogen-IX Limited ("Morphogen-IX")

As the above entities that comprise the Centessa Predecessor Group were historically under the common control of Index Ventures Life VI (Jersey), LP, the historical financial statements of the Group for periods prior to January 30, 2021 are presented on a combined basis and are denoted as "Predecessor" within these financial statements.

Subsequent to the contribution of the Centessa Subsidiaries to Centessa, the financial activities of Centessa and all Centessa Subsidiaries are being presented on a consolidated basis and are denoted as "Successor" within these financial statements.

Initial Public Offering

In June 2021, the Company completed an initial public offering ("IPO") of its ordinary shares through the sale and issuance of 16,500,000 American Depositary Shares ("ADSs"), at an initial price of $20.00 per ADS. Each ADS represents one ordinary share with a nominal value of £0.002 per ordinary share. Following the close of the IPO, the underwriters fully exercised their option to purchase an additional 2,475,000 ADSs at the initial public offering price of $20.00 per ADS. The Company received aggregate net proceeds of $344.1 million in connection with the IPO and subsequent exercise of the underwriter's options after deducting underwriting discounts, commissions and other offering expenses paid or to be paid.

Risks and Liquidity

The Group and the Company are subject to risks common to other life science companies in early stages of development including, but not limited to, uncertainty of product development and commercialization, lack of marketing and sales history, development by its competitors of new technological innovations, dependence on key personnel, market

acceptance of products, product liability, protection of proprietary technology, ability to raise additional financing and compliance with government regulations, in the markets in which the Company is seeking approvals, including U.S. Food and Drug Administration ("FDA") regulations. If the Company does not successfully advance its programs, including the Centessa Subsidiaries' programs, into and through human clinical trials and/or enter into collaborations for its programs and commercialize any of its product candidates, it may be unable to produce product revenue or achieve profitability.

The Group and the Company have incurred losses and negative cash flows from operations since inception and the Company had an accumulated deficit of $385.7 million as of December 31, 2021. The Company anticipates incurring additional losses until such time, if ever, that it can generate significant sales of the product candidates currently in development by the Centessa Subsidiaries. Substantial additional capital will be needed by the Company to fund its operations (including those of the Centessa Subsidiaries) and to develop its product candidates.

In October 2021, the Company entered into a Note Purchase Agreement with Oberland Capital Management LLC ("Oberland Capital"). Under the terms of the agreement, Oberland Capital will purchase up to $300.0 million of 6-year, interest-only (initial interest rate is 8.0% per annum), senior secured notes (the Notes) from the Company including $75.0 million, funded on October 4, 2021, $125.0 million available within 24 months at the Company's option, and $100.0 million available to fund Mergers and Acquisitions ("M&A"), in-licensing, or other strategic transactions, at the option of the Company and Oberland Capital *(See - Note 6 "Debt")*.

The Company expects its existing cash and cash equivalents as of December 31, 2021 of $595.1 million will be sufficient to fund its expected operating expenses and capital expenditure requirements for at least the next 12 months from the date of issuance of these consolidated financial statements.

Global Pandemic – COVID-19

On March 10, 2020, the WHO characterized the novel COVID-19 virus as a global pandemic. The Company is continuing to proactively monitor the COVID-19 global pandemic, to assess the potential impact on the business, and to seek to avoid any unnecessary potential delays to the Company's programs. As of December 31, 2021, the clinical programs and research activities remain largely on track, with some modest delays in clinical trial enrollment rates and supply chain activities. While we are unable to fully quantify the potential effects of this pandemic on our future operations, including potential delays to our preclinical and clinical programs, management continues to evaluate and to seek to mitigate risks. The safety and well-being of employees, patients and partners remains our highest priority.

2. Summary of Significant Accounting Policies

Basis of Presentation and Consolidation/Combination

References to the combined financial statements of the Centessa Predecessor Group refer to three of the eleven direct acquired Centessa Subsidiaries that were deemed to represent the predecessor entity prior to the Company's acquisition of the Centessa Subsidiaries in January 2021. The Centessa Predecessor Group includes the combined financial information of Z Factor, Morphogen-IX and LockBody. The successor includes the consolidated financial information of Centessa and all Centessa Subsidiaries subsequent to the acquisition.

Accordingly, the accompanying consolidated and combined financial statements are presented in accordance with Securities and Exchange Commission ("SEC") requirements for predecessor and successor financial statements, which include the financial results of both the Company and the Centessa Predecessor Group. The results of operations contained in the consolidated and combined financial statements include the Centessa Predecessor Group's combined financial results for the twelve month periods ended December 31, 2020 and December 31, 2019, and the period from January 1, 2021 through January 29, 2021, and the Company's consolidated financial results for the period from January 30, 2021 through December 31, 2021. The consolidated and combined balance sheets present the combined financial position of the Centessa Predecessor Group as of December 31, 2020 and the consolidated financial position of the Company on December 31, 2021.

The accompanying consolidated and combined financial statements have been prepared in conformity with accounting principles generally accepted in the United States of America ("GAAP"). Any reference in these notes to

applicable guidance is meant to refer to GAAP as found in the Accounting Standards Codification ("ASC") and Accounting Standards Updates ("ASUs") promulgated by the Financial Accounting Standards Board ("FASB").

In the opinion of management, the accompanying consolidated and combined financial statements include all normal and recurring adjustments (which consist primarily of accruals, estimates and assumptions that impact the financial statements) considered necessary to present fairly:

- the Company's financial position as of December 31, 2021 and the Predecessor's financial position as of December 31, 2020;
- the Company's results of operations and cash flows for the period from January 30, 2021 through December 31, 2021; and
- the Predecessor's results of operations and cash flows for the period from January 1, 2021 through January 29, 2021 and for the twelve month periods ended December 31, 2020 and December 31, 2019.

The Company's consolidated financial statements include the accounts of Centessa Pharmaceuticals plc, its wholly-owned subsidiary, Centessa Pharmaceuticals, Inc. and the wholly-owned Centessa Subsidiaries. The Centessa Predecessor Group's combined financial statements included the accounts of Z Factor, Morphogen-IX and LockBody. All intercompany accounts and transactions have been eliminated in consolidation and combination.

Emerging Growth Company

We are an "emerging growth company," as defined in the Jumpstart Our Business Startups Act (JOBS Act) enacted in April 2012. For so long as we remain an emerging growth company, we are permitted and intend to rely on certain exemptions from various public company reporting requirements, including not being required to have our internal control over financial reporting audited by our independent registered public accounting firm pursuant to Section 404(b) of the Sarbanes-Oxley Act of 2002, reduced disclosure obligations regarding executive compensation in our periodic reports and proxy statements, exemptions from the requirements of holding a nonbinding advisory vote on executive compensation and any golden parachute payments not previously approved.

We will remain an emerging growth company until the earlier to occur of (1) the last day of the fiscal year that is five years following the closing of our initial public offering, (2) the last day of the fiscal year in which we have total annual gross revenues of at least $1.07 billion, (3) the last day of the fiscal year in which we are deemed to be a "large accelerated filer," under the rules of the U.S. Securities and Exchange Commission, or SEC, which means the market value of our equity securities that is held by non-affiliates exceeds $700 million as of the prior June 30th after we have been subject to the SEC's periodic reporting requirements for at least twelve calendar months and have filed at least one annual report, and (4) the date on which we have issued more than $1.0 billion in non-convertible debt during the prior three-year period.

In addition, the JOBS Act provides that an emerging growth company can take advantage of an extended transition period for complying with new or revised accounting standards. This provision allows an emerging growth company to delay the adoption of some accounting standards until those standards would otherwise apply to private companies. We are electing to utilize the extended transition period and, as a result, will comply with new or revised accounting standards on the relevant dates on which adoption of such standards is required for emerging growth companies.

Even after we no longer qualify as an emerging growth company, we may still qualify as a "smaller reporting company" if the market value of our ordinary shares held by non-affiliates is below $250 million (or $700 million if our annual revenue is less than $100 million) as of June 30 in any given year, which would allow us to take advantage of many of the same exemptions from disclosure requirements, including reduced disclosure obligations regarding executive compensation in our periodic reports and proxy statements.

Cash and Cash Equivalents

The Company considers all highly liquid investments with original maturities of three months or less when purchased to be cash equivalents. Cash and cash equivalents include cash in readily available checking accounts, certificate of deposits and money market funds.

Segments

Operating segments are defined as components of an enterprise with separate discrete information available for evaluation by the chief operating decision maker, or decision-making group, in deciding how to allocate resources and in assessing performance. Centessa Pharmaceuticals plc (Successor) and the Centessa Predecessor Group (Predecessor) view its operations and manage its business as one segment.

Reclassifications

Certain amounts in the prior period financial statements have been reclassified to conform to the presentation of the current period financial statements. These reclassifications had no effect on previously reported net loss or comprehensive loss.

Foreign Currency Translation

The Company's financial statements are presented in U.S. dollars (USD), the reporting currency of the Company. The functional currency of Centessa Pharmaceuticals plc is USD and the functional currency of the Centessa Subsidiaries is their respective local currency. Income and expenses have been translated into USD at average monthly exchange rates prevailing during the period. Assets and liabilities have been translated at the rates of exchange on the balance sheets dates and equity accounts at their respective historical rates. The resulting translation gain and loss adjustments are recorded directly as a separate component of shareholders' equity as other comprehensive income (loss). Transactions denominated in a currency other than the functional currency are remeasured based upon the exchange rate at the date of remeasurement with the resulting gain or loss included in the accompanying consolidated and combined statements of operations and comprehensive loss within Other income (expense), net. The aggregate foreign currency transaction loss included in the Company (Successor)'s results of operations for the period from January 30, 2021 through December 31, 2021 was $3.6 million.

The functional currency of Centessa Pharmaceuticals plc had previously been British pounds (GBP), as Centessa Pharmaceutical plc's primary activities during formation were mostly denominated in GBP, including related transaction costs, the acquisition of Centessa subsidiaries predominantly with operations in GBP and the issuance of shares with a GBP nominal value as consideration in the acquisition. Beginning in the second quarter of 2021, the functional currency of Centessa Pharmaceuticals plc changed from GBP to USD. The change in functional currency was the result of many factors including the completion of an IPO and receipt of proceeds in USD which resulted in USD denominated assets exceeding GBP denominated assets, the increase in the number of U.S.-based employees, and the increase in costs denominated in USD, following completion of the Company's IPO on a U.S. stock exchange (Nasdaq). Given these significant changes, the Company considered the economic factors outlined in ASC 830, *Foreign Currency Matters* and concluded that the majority of the factors supported the use of the USD as the functional currency for Centessa Pharmaceutical plc.

The change in functional currency for Centessa Pharmaceuticals plc was applied on a prospective basis beginning in the second quarter of 2021 and translation adjustments for prior periods will continue to remain as a component of accumulated other comprehensive loss. The Company reclassified the presentation of foreign currency gains and losses recognized in the first quarter of 2021 from General & administration expense to Other income (expense), net to conform to the current period financial statement presentation.

Use of Estimates

The preparation of financial statements in conformity with U.S. GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities

as of the date of the consolidated and combined financial statements and the reported amounts of expenses during the reporting period. Actual results could differ from those estimates.

Estimates and assumptions are periodically reviewed and the effects of revisions are reflected in the consolidated and combined financial statements in the period they are determined to be necessary. Significant areas that require management's estimates include share-based compensation assumptions, the note purchase agreement, derivative liability and contingent value rights assumptions, accrued research and development expenses, and, prior to the IPO, the fair value of the Company's ordinary shares.

Property and Equipment, net

Property and equipment are recorded at cost and depreciated using the straight-line method over their estimated useful lives. The costs of maintenance and repairs are expensed as incurred. Improvements and betterment that add new functionality or extend the useful life of the asset are capitalized. As of December 31, 2021, the Company's property and equipment consisted largely of computer equipment, which is depreciated over its useful life of three years. Depreciation expense was $34 thousand for the period from January 30, 2021 through December 31, 2021.

Long-Lived Assets

Long-lived assets are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. Recoverability of assets to be held and used is measured by a comparison of the carrying amount of an asset to estimated undiscounted future cash flows expected to be generated by the asset. If the carrying amount of an asset exceeds its estimated undiscounted future cash flows, then an impairment charge is recognized for the amount by which the carrying value of the asset exceeds the estimated fair value of the asset. As of December 31, 2021, the Company believes that no revision of the remaining useful lives or write-down of long-lived assets is required.

Fair Value Measurement

Fair value is the price that could be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants. Fair value determination in accordance with applicable accounting guidance requires that a number of significant judgments be made. Additionally, fair value is used on a nonrecurring basis to evaluate assets for impairment or as required for disclosure purposes by applicable accounting guidance on disclosures about fair value of financial instruments. Depending on the nature of the assets and liabilities, various valuation techniques and assumptions are used when estimating fair value. The carrying amounts of certain of the Company's financial instruments, including cash and cash equivalents, prepaid expense and accounts payable, are shown at cost, which approximates fair value due to the short-term nature of these instruments. The Company follows the provisions of FASB ASC Topic 820, *Fair Value Measurement*, for financial assets and liabilities measured on a recurring basis. The guidance requires fair value measurements be classified and disclosed in one of the following three categories:

Level 1: Unadjusted quoted prices in active markets that are accessible at the measurement date for identical, unrestricted assets or liabilities.

Level 2: Quoted prices in markets that are not active, or inputs which are observable, either directly or indirectly, for substantially the full term of the asset or liabilities.

Level 3: Prices or valuation techniques that require inputs that are both significant to the fair value measurement and unobservable (i.e., supported by little or no market activity).

Contingent Value Rights

The fair value of the contingent value rights liability represents the estimated future payments that will be settled by issuing a variable number of shares and that are contingent upon the achievement of a specified development milestone for Palladio Biosciences, Inc.'s product candidate. The fair value of the contingent value rights was based on the cumulative probability of achieving the specified milestone, which was expected by the first quarter of 2022. The fair value measurement is based on significant Level 3 unobservable inputs such as the probability of achieving the milestone,

anticipated timelines, and discount rate. Changes in the fair value of the liability are recognized in the consolidated statement of operations and comprehensive loss until it is settled. See Note 13 - *"Subsequent Events"*.

Note Purchase Agreement

As described in further detail in Note 6 - *"Debt"*, in October 2021, the Company entered into a Note Purchase Agreement (the "Notes") with Oberland Capital Management LLC (Oberland Capital). Under the terms of the agreement, Oberland Capital will purchase up to $300.0 million of 6-year, interest-only (initial interest rate is 8.0% per annum), senior secured notes (the Notes) from the Company including $75.0 million, funded on October 4, 2021, $125.0 million available within 24 months at the Company's option, and $100.0 million available to fund Mergers and Acquisitions (M&A), in-licensing, or other strategic transactions, at the option of the Company and Oberland Capital. In addition to interest payments on the principal, the Company is obligated to pay certain revenue participation payments, starting on the date of the first commercial sale of lixivaptan, currently a product candidate under development by the Company, and ending on the tenth anniversary of the First Purchase Date; and is obligated to pay a one-time milestone payment upon the Company's first product to obtain regulatory approval.

The Company evaluated the Notes and determined that the Notes include embedded derivatives that would otherwise require bifurcation as derivative liabilities. Neither the debt instrument nor any embedded features are required to be classified as equity. Therefore, the hybrid financial instrument comprised of the debt host and the embedded derivative liability may be accounted for under the fair value option. The Company elected to carry the Notes at fair value, and the debt instrument is outside the scope of ASC 480, *Distinguishing Liabilities from Equity*, and thus will be classified as a liability under ASC 470, *Debt*, in the Company's financial statements. As the Company has elected to account for the Notes under the fair value option, debt issuance costs were immediately expensed.

The fair value of the Note Purchase Agreement represents the present value of estimated future payments, including interest, principal as well as estimated payments that are contingent upon the achievement of specified milestones. The fair value of the Notes is based on the cumulative probability of the various estimated payments. The fair value measurement is based on significant Level 3 unobservable inputs such as the probability of achieving the milestones, anticipated timelines, probability and timing of an early redemption of all obligations under the agreement and the discount rate. Any changes in the fair value of the liability in each reporting period are recognized in the consolidated statement of operations and comprehensive loss until it is settled.

Research and Development Expenses and Accruals

All research and development costs are expensed in the period incurred and consist primarily of salaries, payroll taxes, employee benefits, stock-based compensation charges for those individuals involved in research and development efforts, external research and development costs incurred under agreements with contract research organizations and consultants to conduct and support the Company's ongoing clinical trials.

The Company has entered into various research and development contracts with clinical research organizations, clinical manufacturing organizations and other companies. Payments for these activities are based on the terms of the individual agreements, which may differ from the pattern of costs incurred. Payments made in advance of performance are reflected in the accompanying balance sheets as prepaid expenses, while payments made after performance are reflected as accrued liabilities in the accompanying balance sheets. The Company records accruals for estimated costs incurred for ongoing research and development activities. When recording accruals for ongoing research and development activities, the Company analyzes progress of the services, including the phase or completion of events, invoices received and contracted costs. Nonrefundable advance payments for goods and services, including fees for process development or manufacturing and distribution of clinical supplies that will be used in future research and development activities, are recognized as expense in the period that the related goods are consumed or services are performed.

Milestone payments within the Company (Successor)'s licensing arrangements are recognized when achievement of the milestone is deemed probable to occur. To the extent products are commercialized and future economic benefit has been established, commercial milestones that become probable are capitalized and amortized over the estimated remaining useful life of the intellectual property. Significant judgments and estimates may be made in determining the prepaid or accrued balances at the end of any reporting period. Actual results could differ from the Company's estimates.

Acquired In-Process Research and Development Expenses

Acquired in-process research and development ("IPR&D"), consists of the initial up-front payments incurred in connection with the acquisition or licensing of products or technologies in transactions that do not meet the definition of a business under FASB ASC Topic 805, *Business Combinations.*

Collaborative Arrangements

The Company enters into collaborative arrangements to develop and commercialize intellectual property. These arrangements typically involve two (or more) parties who are active participants in the collaboration and are exposed to significant risks and rewards dependent on the commercial success of the activities. These collaborations usually involve various activities by one or more parties, including research and development, marketing and selling and distribution. Often, these collaborations require upfront, milestone and royalty or profit share payments, contingent upon the occurrence of certain future events linked to the success of the asset in development. Amounts due to collaborative partners related to development activities are generally reflected as research and development expense.

Share-Based Compensation

The Company and the Predecessor measure share-based awards, including restricted shares and stock options, at their grant-date fair value and record compensation expense on a straight-line basis over the vesting period of the awards. Subsequent to the IPO, the Company determines the fair value of share-based compensation awards using the market closing price of the Company's ADSs on the date of grant. The Company accounts for forfeitures of stock option awards as they occur.

The Company uses the Black-Scholes option pricing model to value its stock option awards. The expected life of the stock options is estimated using the "simplified method," as the Company has limited historical information from which to develop reasonable expectations about future exercise patterns and post-vesting employment termination behavior for its stock option grants. The simplified method is the midpoint between the vesting period and the contractual term of the option. For share price volatility, the Company uses comparable public companies as a basis for its expected volatility to calculate the fair value of option grants. The risk-free rate is based on the U.S. Treasury yield curve commensurate with the expected life of the option. The estimated annual dividend yield is 0% because the Company has not historically paid and does not expect for the foreseeable future to pay a dividend on its ordinary shares. Forfeitures of stock options are recognized in the period the forfeiture occurs.

Prior to its IPO in June 2021, the fair value of the Company's ordinary shares was determined by the Company's board of directors with assistance from management and an independent third-party valuation firm. As discussed in further detail in Note 3 - *"Acquisition of Centessa Subsidiaries"*, the estimated fair value of its ordinary shares was based on the Hybrid Method outlined in the American Institute of Certified Public Accountants' Accounting and Valuation Guide, *Valuation of Privately-Held-Company Equity Securities Issued as Compensation*, ("Practice Guide"). Subjective factors considered by the Company's board of directors and management included the pending addition of new executive members and the election of new independent directors to the Company's board of directors, as well as definitive plans to undertake an IPO. The assumptions used in estimating the fair value of share-based awards represent management's estimate and involve inherent uncertainties and the application of management's judgment. As a result, if factors change and management uses different assumptions, share-based compensation expense could be materially different for future awards.

Retirement Plans

The Company provided defined contribution plans to its employees during 2021. In the US, the primary plan sponsored by the Company is a safe harbor, 401k plan with a 4% employer match, no waiting period and immediate vesting on the match. In the UK, the primary plan sponsored by the Company is a money purchase plan, which requires a minimum 7% contribution, including a minimum employer contribution of 3% and employee contribution of 4% in 2021. The Company recorded charges of $0.2 million under these plans during the period beginning January 30, 2021 to December 31, 2021.

Income Taxes

The Company follows the asset and liability method of accounting for income taxes under ASC 740, *Income Taxes*. Deferred tax assets and liabilities are recognized for the estimated future tax consequences attributable to differences between the financial statements carrying amounts of existing assets and liabilities and their respective tax bases. Deferred tax assets and liabilities are measured using enacted tax rates expected to apply to taxable income in the years in which those temporary differences are expected to be recovered or settled. The effect on deferred tax assets and liabilities of a change in tax rates is recognized in income in the period that included the enactment date. Valuation allowances are established, when necessary, to reduce deferred tax assets to the amount expected to be realized.

ASC 740 prescribes a recognition threshold and a measurement attribute for the financial statement recognition and measurement of tax positions taken or expected to be taken in a tax return. For those benefits to be recognized, a tax position must be more likely than not to be sustained upon examination by taxing authorities. The Company recognizes accrued interest and penalties related to unrecognized tax benefits as income tax expense. There were no unrecognized tax benefits and no amounts accrued for interest and penalties as of December 31, 2021. The Company is currently not aware of any issues under review that could result in significant payments, accruals or material deviation from its position. The Company is subject to income tax examinations by major taxing authorities since inception.

Net Loss Per Ordinary Share

Basic loss per ordinary share is computed by dividing net loss by the aggregate weighted-average number of ordinary shares outstanding. Diluted loss per ordinary share includes the effect, if any, from the potential exercise or conversion of securities, such as convertible preferred shares, stock options, unvested restricted ordinary shares and convertible debt which would result in the issuance of incremental ordinary shares. For diluted net loss per ordinary share, the weighted-average number of ordinary shares is the same for basic net loss per ordinary share due to the fact that when a net loss exists, dilutive securities are not included in the calculation as the impact is anti-dilutive.

The following potentially dilutive securities have been excluded from the computation of diluted weighted-average ordinary shares outstanding for the period from January 30, 2021 through December 31, 2021, as they would be anti-dilutive.

Unvested ordinary shares	982,944
Stock options	11,730,382
	12,713,326

Recently Issued Accounting Pronouncements

In February 2016, the FASB issued ASU No. 2016-02, *Leases ("ASC 842")*, which requires a lessee to record a right-of-use asset and a corresponding lease liability on the balance sheet for all leases with terms longer than 12 months. Lessees and lessors must adopt ASC 842 utilizing a modified retrospective transition approach. Entities can elect to apply the transition requirements under ASC 842 either (a) at the beginning of the earliest period presented in the financial statements in the year of adoption or (b) in the period of adoption. As the Company has elected to use the extended transition period for complying with new or revised accounting standards as available under the JOBS Act, the standard is effective for the Company beginning January 1, 2022. As of December 31, 2021, the Company was not party to any significant leases and therefore does not expect the adoption of this standard to have a significant impact as of the adoption date. This lease guidance will impact the Company's consolidated financial statements and related disclosures when it is a party to such lease agreements. See Note 13 - *"Subsequent Events"*.

In July 2021, the FASB issued ASU 2021-05, Lease (Topic): Lessors - Certain Leases with Variable Lease Payments ("ASU 2021-05"). The guidance in ASU 2021-05 amends the lease classification requirements for the lessors under certain leases containing variable payments to align with practice under ASC 840, *Leases*. The lessor should classify and account for a lease with variable lease payments that do not depend on a reference index or a rate as an operating lease if both of the following criteria are met: 1) the lease would have been classified as a sales-type lease or a direct financing lease in accordance with the classification criteria in ASC 842-10-25-2 through 25-3; and 2) the lessor would have otherwise recognized a day-one loss. The amendments in ASU 2021-05 are effective for fiscal years beginning after December 15, 2021. As of December 31, 2021, the Company was not a lessor in a lease agreement. Therefore, we do not

expect the adoption of this guidance to have any effect on the consolidated and combined financial statements and related disclosures.

In May 2021, the FASB issued ASU 2021-04, Issuer's Accounting for Certain Modifications or Exchanges of Freestanding Equity-Classified Written Call Options, ("ASU 2021-04") which clarifies the accounting for modifications or exchanges of freestanding equity-classified written call options that remain equity classified after modification or exchange. Specifically, ASU 2021-04 requires the issuer to treat a modification of an equity-classified warrant as an exchange of the original warrant. The difference between the fair value of the modified warrant and the fair value of the warrant immediately before modification is then recognized as an issuance cost or discount of the related transaction. ASU 2021-04 is effective for fiscal years beginning after December 15, 2021, and interim periods within those fiscal years, with early adoption permitted. ASU 2021-04 should be applied prospectively to modifications or exchanges occurring after the effective date. Either the full or modified retrospective adoption method is allowed. We do not have any equity-classified written call options that would be subject to this guidance. Therefore, we do not expect any impact on the Company's consolidated and combined financial statements and related disclosures.

In August 2020, the FASB issued ASU 2020-06, "(Subtopic 470-20): Debt—*Debt with Conversion and Other Options" ("ASU 2020-06")* to address the complexity associated with applying GAAP to certain financial instruments with characteristics of liabilities and equity. ASU 2020-06 includes amendments to the guidance on convertible instruments and the derivative scope exception for contracts in an entity's own equity and simplifies the accounting for convertible instruments which include beneficial conversion features or cash conversion features by removing certain separation models in Subtopic 470-20. Additionally, ASU 2020-06 will require entities to use the "if-converted" method when calculating diluted earnings per share for convertible instruments. ASU 2020-06 is effective for fiscal years beginning after December 15, 2023 (fiscal year 2024 for the Company), including interim periods within those fiscal years. The Company is currently evaluating the impact of ASU 2020-06 to the consolidated financial statements and related disclosures.

In December 2019, the FASB issued ASU 2019-12, "Income Taxes (Topic 740): Simplifying the Accounting for Income Taxes," which is intended to simplify various aspects related to accounting for income taxes. ASU 2019-12 removes certain exceptions to the general principles in Topic 740 and also clarifies and amends existing guidance to improve consistent application. ASU 2019-12 is effective for fiscal years beginning after December 15, 2021. The Company is currently evaluating ASU 2019-12 and its impact on the consolidated and combined financial statements.

3. Acquisition of Centessa Subsidiaries

In January 2021, the Company entered into a contribution or merger agreement with each Centessa Subsidiary whereby the Company acquired 100% of the outstanding Centessa Subsidiaries' shares in exchange for, in aggregate, 44,758,079 ordinary shares of the Company. In addition, the Company issued certain contingent value rights to the selling shareholders of Palladio Biosciences, Inc.

As part of the acquisition, the Company issued replacement equity awards to select employees and consultants of certain Centessa Subsidiaries. The awards consisted of options and restricted shares with vesting provisions generally consistent with the original awards prior to the acquisition. The Company determined that a portion of the fair value of the replacement awards should be a component of consideration paid to acquire the Centessa Subsidiaries, with the remaining value of the award accounted for as post-combination share-based compensation expense.

The acquisition of each Centessa Subsidiary has been treated as a separate asset acquisition as the Company determined that none of the Centessa Subsidiaries meet the definition of a business due to substantially all of the fair value of each entity being concentrated in a single asset or group of assets which represent the IPR&D or the entity did not have the requisite inputs and substantive processes to be considered a business. The Company's acquired IPR&D expense of $223.6 million, of which $3.1 million was in connection with transaction costs recognized prior to January 30, 2021, and reflects the fair value of consideration ascribed to the product candidates in each subsidiary, as the Company determined the assets had no alternative future use.

The total purchase price for the asset acquisitions was calculated as follows (amounts in thousands):

Estimated fair value of Centessa ordinary shares issued	$	261,387
Estimated fair value of replacement equity awards allocated to consideration paid		1,310
Estimated fair value of contingent value rights		22,618
Transaction costs		4,597
Total consideration given	$	289,912

The following table summarizes the assets acquired and liabilities assumed as of the acquisition date for the asset acquisitions (amounts in thousands):

Assets acquired:		
Cash and cash equivalents	$	68,038
Tax incentive receivable		8,752
Prepaid expenses and other current assets		2,551
Other assets		203
In-process research and development assets		223,593
Total assets acquired	$	303,137
Liabilities assumed:		
Accounts payable	$	3,607
Accrued expenses and other current liabilities		3,128
Convertible notes		6,199
Loan with related party		291
Total liabilities assumed	$	13,225
Net assets acquired	$	289,912

The Company's determinations of the fair value of the ordinary shares were performed using methodologies, approaches and assumptions in accordance with the guidance outlined in the American Institute of Certified Public Accountants' Accounting and Valuation Guide, *Valuation of Privately-Held-Company Equity Securities Issued as Compensation*, ("Practice Guide"). In accordance with the Practice Guide, the Company considered the following methods for allocating the enterprise value across its classes and series of capital shares to determine the fair value of its ordinary shares at each valuation date.

- *Option Pricing Method* ("OPM"). The OPM estimates the value of the ordinary equity of the Company using the various inputs in the Black-Scholes option pricing model. The OPM treats the rights of the holders of ordinary shares as equivalent to that of call options on any value of the enterprise above certain break points of value based upon the liquidation preferences of the holders of the Company's convertible preferred shares, as well as their rights to participation, and the share prices of the outstanding options. Thus, the value of the ordinary shares can be determined by estimating the value of its portion of each of these call option rights. Under this method, the ordinary shares have value only if the funds available for distribution to shareholders exceed the value of the liquidation preference at the time of a liquidity event, such as a merger or sale. Given the ordinary shares represents a non-marketable equity interest in a private enterprise, an adjustment to the preliminary value estimates had to be made to account for the lack of liquidity that a shareholder experiences. This adjustment is commonly referred to as a discount for lack of marketability ("DLOM").
- *Probability-Weighted Expected Return Method* ("PWERM"). The PWERM is a scenario-based analysis that estimates the value per share based on the probability-weighted present value of expected future investment returns, considering each of the possible outcomes considered by the Company, as well as the economic and control rights of each share class.
- *Hybrid Method.* The Hybrid Method is a hybrid between the PWERM and OPM, estimating the probability-weighted value across multiple scenarios, but using the OPM to estimate the allocation of value within one or

more of those scenarios. Weighting allocations are assigned to the OPM and PWERM methods factoring possible future liquidity events.

The Company estimated the fair value of its ordinary shares based on the Hybrid Method. Subjective factors considered by the Company's board of directors and management included the pending addition of new executive members and the election of new independent directors to the Company's board of directors, as well as definitive plans to undertake an IPO. There are significant judgments and estimates inherent in the determination of the fair value of ordinary shares. These judgments and estimates included assumptions regarding the Company's future operating performance, the time to complete an initial public offering or other liquidity event and the determination of the appropriate valuation methods. If the Company had made different assumptions, its ordinary shares could have been significantly different.

At the time of the acquisitions, all outstanding unvested share-based awards of the Centessa Predecessor Group vested immediately. The unrecognized compensation expense of $4.1 million was recognized at the time of the acquisitions.

In connection with the acquisition of the Centessa Subsidiaries, the Company issued contingent value rights (CVR), to former shareholders and option holders of Palladio. The CVR represent the contractual rights to receive shares valued, in aggregate, at $39.7 million upon the first patient dosed in a Phase 3 pivotal study of lixivaptan for the treatment of autosomal dominant polycystic kidney disease ("ADPKD") in any of the United States, France, Germany, Italy, Spain, the United Kingdom and Japan (designated the ACTION Study).

The Company determined that the CVR should be accounted for as a liability in accordance with ASC 480, *Distinguishing Liabilities from Equity*. Accordingly, the fair value of the contingent consideration is assessed quarterly until settlement. To estimate the fair value of the contingent consideration, the Company applied a cumulative probability of achieving the clinical milestone and applied it to the potential payout. While the Company will consider the status and on-going results of the non-registrational safety study (designated the "ALERT Study"), an open-label study for which enrollment was on-going, the Company intended to commence the Phase 3 registrational study (designated the "ACTION Study") in parallel with the ALERT Study. Therefore, the probability, at the date of acquisition of Centessa Subsidiaries, of commencing the ACTION Study and dosing the first patient was high and the milestone was expected by the first quarter of 2022. The cumulative probability of dosing the first patient in the ACTION Study was applied to the CVR payout to arrive at a fair value of $22.6 million as of the acquisition date of the Centessa Subsidiaries. See Note 13 - *"Subsequent Events"*.

4. Fair Value of Financial Instruments

The following fair value hierarchy table presents information about the Company's assets and liabilities that are measured at fair value on a recurring basis (amounts in thousands):

	Fair value measurement at reporting date using		
	Quoted prices in active markets for identical assets (Level 1)	Significant other observable inputs (Level 2)	Significant unobservable inputs (Level 3)
December 31, 2021 (Successor)			
Liabilities			
Note Purchase Agreement	$ —	$ —	$ 75,700
Contingent Value Rights	$ —	$ —	$ 37,700

	Fair value measurement at reporting date using		
	Quoted prices in active markets for identical assets (Level 1)	Significant other observable inputs (Level 2)	Significant unobservable inputs (Level 3)
December 31, 2020 (Predecessor)			
Liabilities			
Derivative liability	$ —	$ —	$ 913

The fair value of the Note Purchase Agreement represents the present value of estimated future payments, including interest, principal as well as estimated payments that are contingent upon the achievement of specified milestones. The fair value of the notes is based on the cumulative probability of the various estimated payments. The fair value measurement is based on significant Level 3 unobservable inputs such as the probability of achieving the milestones, anticipated timelines, probability and timing of an early redemption of all obligations under the agreement and discount rate. Any changes in the fair value of the liability are recognized in the consolidated statement of operations and comprehensive loss until it is settled. For the period beginning on January 30, 2021 through December 31, 2021, the Company recorded a loss of $0.7 million for the estimated change in fair value of the Note Purchase Agreement, which was recorded in Other Income (Expense), net in the consolidated statement of operations and comprehensive loss.

The acquisition-date fair value of the contingent valuation rights liability represented the estimated future payments that are contingent upon the achievement of a specified development for Palladio's product candidate. The fair value of the contingent value rights was based on the cumulative probability of achieving the specified milestone, which was expected by the first quarter of 2022. The fair value measurement at December 31, 2021 was based on significant Level 3 unobservable inputs such as the probability of achieving the milestone, anticipated timelines, and discount rate. Changes in the fair value of the liability will be recognized in the statement of operations and comprehensive loss until it is settled. See Note 13 - *"Subsequent Events"*.

The Centessa Predecessor Group evaluated a redemption feature within the convertible term notes and determined bifurcation of the redemption feature was required. The redemption feature is classified as a liability on the accompanying consolidated and combined balance sheet at December 31, 2020. The liability was marked-to-market each reporting period with the changes in fair value recorded in the consolidated and combined statements of operations and comprehensive loss until it was settled. The derivative liability was considered a Level 3 liability because its fair value measurement was based, in part, on significant inputs not observed in the market. The fair value of the derivative was estimated primarily on the probability of the next fund raising occurring and the timing of such event. Upon completion of the acquisition of the Centessa Subsidiaries in January 2021, the derivative liability was settled and is no longer subject to remeasurement.

The reconciliation of the redemption feature measured at fair value on a recurring basis using significant unobservable inputs (Level 3) is as follows (amounts in thousands):

	Contingent Value Rights	Note Purchase Agreement	Derivative Liability
Balance at January 1, 2021 (Predecessor)	$ —	$ —	$ 913
Additions	—	—	—
Change in fair value	—	—	—
Settlements	—	—	(913)
Balance at January 29, 2021 (Predecessor)	$ —	$ —	$ —
Balance at January 30, 2021 (Successor)	$ —	$ —	$ —
Additions	22,618	75,000	—
Change in fair value	15,082	700	—
Balance at December 31, 2021 (Successor)	$ 37,700	$ 75,700	$ —

5. Balance Sheet and Combined Deficit Components

Prepaid expenses and other current assets consist of the following (amounts in thousands):

	Successor	Predecessor
	December 31, 2021	December 31, 2020
Research and development costs	$ 11,224	$ 992
Insurance related costs	4,661	9
Value added tax receivable	1,422	298
Other	993	6
	$ 18,300	$ 1,305

Accrued expenses and other current liabilities consist of the following (amounts in thousands):

	Successor	Predecessor
	December 31, 2021	December 31, 2020
Research and development costs	$ 9,323	$ 1,001
Personnel related expenses	4,865	—
Professional fees	1,514	37
Income tax liability	769	—
Other	102	9
	$ 16,573	$ 1,047

Property and equipment, net consisted of the following (amounts in thousands):

	Successor	Predecessor
	December 31, 2021	December 31, 2020
Computer equipment	$ 196	$ —
Less: Accumulated depreciation	(34)	—
Property and equipment, net	$ 162	$ —

Combined deficit of the Centessa Predecessor Group at January 29, 2021, December 31, 2020 and December 31, 2019 consisted of the following (amounts in thousands):

	Predecessor		
	January 29, 2021	December 31, 2020	December 31, 2019
Morphogen-IX deficit			
Ordinary shares	$ 13	$ 13	$ 13
Additional paid-in capital	364	364	215
Accumulated other comprehensive income	636	629	589
Accumulated deficit	(9,413)	(9,225)	(5,590)
Total Morphogen-IX deficit	$ (8,400)	$ (8,219)	$ (4,773)
Z Factor deficit			
Ordinary shares	$ 12	$ 12	$ 11
Additional paid-in capital	461	461	274
Accumulated other comprehensive income	141	139	181
Accumulated deficit	(8,875)	(8,568)	(4,587)
Total Z Factor deficit	$ (8,261)	$ (7,956)	$ (4,121)
LockBody deficit			
Ordinary shares	$ —	$ —	$ —
Additional paid-in capital	—	—	—
Accumulated other comprehensive income (loss)	(98)	(196)	41
Accumulated deficit	(6,386)	(6,052)	(3,004)
Total LockBody deficit	$ (6,484)	$ (6,248)	(2,963)
Total combined deficit	$ (23,145)	$ (22,423)	$ (11,857)

6. Debt

	(Amounts in thousands)	
	Successor	Predecessor
	December 31, 2021	December 31, 2020
Note Purchase Agreement	$ 75,700	$ —
Convertible Term Notes	—	5,339
Term Loans	—	288
	$ 75,700	$ 5,627

Note Purchase Agreement

On October 1, 2021 (the "Signing Date"), the Company, as issuer, and certain of the Company's wholly owned subsidiaries, as guarantors (the "Guarantors"), entered into a Note Purchase Agreement (the "Note Purchase Agreement") with the Purchasers party thereto (the "Purchasers"), and Cocoon SA LLC (the "Agent"), an affiliate of Oberland Capital Management LLC, as agent for the Purchasers.

Under the Note Purchase Agreement, since amended on February 11, 2022, the Purchasers agreed to purchase, and the Company agreed to sell, tranches of secured notes in the aggregate principal amount of up to $300,000,000 as follows: (a) a secured note in the aggregate principal amount of $75,000,000 (the "First Purchase Note"), which was funded on October 4, 2021, (b) on and after the Signing Date until September 30, 2023, at the Company's option, a secured

note in the aggregate principal amount of $75,000,000 (the "Second Purchase Note"), (c) on and after the Signing Date until December 31, 2023, at the Company's option, a secured note in the aggregate principal amount of $50,000,000 (the "Third Purchase Note"), and (d) one or more secured notes in the aggregate principal amount of up to $100,000,000 at any time at the Company's and Purchasers' option, to be used to finance certain permitted acquisitions as described in the Note Purchase Agreement (the "Fourth Purchase Notes" and collectively with the First Purchase Note, the Second Purchase Note and the Third Purchase Note, the "Notes"). The obligations of the Purchasers to purchase the Notes are subject to certain conditions precedent.

The Notes will mature on the six-year anniversary of the First Purchase Date, unless earlier accelerated under the terms of the Note Purchase Agreement. At maturity, the Company must repay the outstanding principal amount of the Notes, together with any accrued and unpaid interest thereon and other outstanding obligations thereunder. Interest is payable quarterly during the term of the Notes at a rate per annum equal to the sum of (a) the greater of (i) LIBOR (which may be subject to replacement as contemplated by the Note Purchase Agreement) and (ii) 0.25% and (b) 7.75% (which percentage is subject to adjustment as described in the Note Purchase Agreement); provided that the interest rate shall never be less than 8.00%. The initial interest rate for the Notes is 8.00% per annum.

The Company's obligations under the facility are secured by a first priority security interest in all assets of the Company and Guarantors, subject to variation in accordance with local law with respect to assets held by the Company and the Guarantors outside of the United States.

Starting on the date of the first commercial sale of lixivaptan, currently a product candidate under development by the Company, and ending on the tenth anniversary of the First Purchase Date, the Purchasers shall have the right to receive 1.0% (the "Revenue Participation Rate") of the first $200.0 million of worldwide net sales of lixivaptan in each calendar year, payable quarterly (the "Revenue Participation Payments"). The Revenue Participation Rate is subject to pro-rata increase if the Second Purchase Notes and/or the Third Purchase Notes are issued and shall not exceed 2.67%.

In addition, upon the first regulatory approval of any of the Company's product candidates by either the U.S. Food and Drug Administration ("FDA") or the European Medicines Agency ("EMA"), the Company is obligated to pay the Purchasers an amount equal to 30% of the aggregate principal amount issued under the Notes by the Company (the "Milestone Payment"). The Milestone Payment shall be paid in quarterly installments over five years beginning on the earlier of (i) the date of the first commercial sale following such regulatory approval; and (ii) the six month anniversary of such regulatory approval. The Milestone Payment is triggered one time only, and applies only to the Company's first product to obtain regulatory approval.

The Company may redeem all, but not less than all, of the outstanding Notes (if any) and pay all other outstanding obligations under the Note Purchase Agreement. On the applicable date, the Company shall repurchase the Notes by paying an amount of up to (i) 175% of the principal amount issued under the Notes if such repurchase occurs on or prior to the third anniversary of the First Purchase Date, (ii) 185% of the principal amount issued under the Notes if such repurchase occurs between the third and sixth anniversaries of the First Purchase Date, and (iii) 205% of the principal amount issued under the Notes if such repurchase occurs thereafter, in each case less specified deductions and exclusions described in the Note Purchase Agreement, including amounts paid by the Company to the Purchasers in respect of certain asset sale or strategic transactions, the interest payments, the Revenue Participation Payments and the Milestone Payments (the "Final Payment Amount"). As of December 31, 2021, the cumulative payments under the Note Purchase Agreement, including interest payments, totaled $1.5 million.

Conversely, the Purchasers may require the Company to redeem any outstanding Notes by payment of the Final Payment Amount upon a sale, divestment or transfer of all or substantially all assets of the Company in a transaction or series of transactions or a change of control of the Company, a material breach of the Note Purchase Agreement and related transaction documents, an event of default under the Note Purchase Agreement or the tenth anniversary of the First Purchase Date (or such earlier date as described in the Note Purchase Agreement). In addition, upon certain asset sales and similar strategic transactions by the Company with respect to its own or its subsidiaries' assets or businesses as described in the Note Purchase Agreement (other than a change of control described above), the Purchasers may require the Company to pay an amount in cash equal to up to 75% of the Net Proceeds (as defined in the Note Purchase Agreement) received from such asset sales, subject to such reduced amounts as described in the Note Purchase Agreement.

The Note Purchase Agreement contains customary affirmative and negative covenants, including with respect to notice obligations, limitations on new indebtedness, liens, investments and transactions with affiliates of the Company, restrictions on the payment of dividends, maintenance of collateral accounts, maintenance of insurance and addition of new subsidiaries as obligors. The Note Purchase Agreement also contains customary representations and warranties in favor of the Purchasers and the Agent. The Note Purchase Agreement contains customary events of default, which may cause the obligations of the Company to be accelerated. Such events include among others, failure to make payments when due, breach of covenants, insolvency, a cross-default to other indebtedness, a judgment event of default, and delisting of the Company's securities from Nasdaq.

On February 11, 2022, Centessa Pharmaceuticals plc, as issuer, and certain of the Company's wholly owned subsidiaries, as guarantors (the "Guarantors"), entered into an Amendment to Note Purchase Agreement (the "Amendment") with Three Peaks Capital Solutions Aggregator Fund (the "Purchaser"), and Cocoon SA LLC (the "Purchaser Agent"), an affiliate of Oberland Capital Management LLC, as agent for the Purchaser to modify the Note Purchase Agreement (the "Note Purchase Agreement"), dated as of October 1, 2021 by and among the Company, the Guarantors, the Purchaser and the Purchaser Agent.

Under the terms of the Amendment, the Company acknowledged the existence of certain Events of Default, including the delivery by the Company of a landlord consent after the required delivery date of October 31, 2021 and the entry by a subsidiary of the Company into a Research Collaboration and License Agreement without the prior consent of Purchaser Agent; as well as other non-financial, administrative-related defaults. Under the Note Purchase Agreement, Events of Default may entitle the lenders to default interest, penalties and the ability to terminate the facility and to accelerate repayment of any outstanding loans in full. Pursuant to the Amendment, the lenders agreed to waive such Events of Default.

Pursuant to the Amendment, the Purchaser and the Purchaser Agent have also agreed to waive the requirement to obtain the consent of a certain licensee and waive certain of the insurance requirements contained in the Note Purchase Agreement. The Amendment also provides that the Company is required to maintain a cash balance in an amount equal to 75% of the aggregate outstanding principal amount of all issued Notes, as defined in the Note Purchase Agreement, that have been issued on and from February 11, 2022. Also pursuant to the Amendment, the date for the Third Purchase Date, as defined in the Note Purchase Agreement, and the Commitment Termination Date were extended to December 31, 2023. The Amendment also provides that upon the sale of any of the Company's or any of its subsidiary's assets, if the Purchaser Agent elects to have the Company repurchase the notes, such repurchase amounts will be subject to a $100 million deductible such that the Purchaser Agent will not collect any repurchase amounts until $100 million has been received by the Company from such sale event. In addition, the reduced payment cap that is triggered by the Purchaser Agent opting into a repayment in the event of an asset sale, extends to the second loan tranche, if drawn. The effectiveness of the Amendment is subject to certain conditions precedent and conditions subsequent.

The Company evaluated the Notes under ASC 815, *Derivatives and Hedging,* and determined that the Notes include embedded derivatives that would otherwise require bifurcation as derivative liabilities. Neither the debt instrument nor any embedded features are required to be classified as equity. Therefore, the hybrid financial instrument comprised of the debt host and the embedded derivative liability may be accounted for under the fair value option. The Company has elected to carry the Notes at fair value, and the debt instrument is outside the scope of ASC 480, *Distinguishing Liabilities from Equity,* and thus will be classified as a liability under ASC 470, *Debt,* in the Company's consolidated financial position. As the Company has elected to account for the Notes under the fair value option, debt issuance costs of $1.3 million were immediately expensed.

Centessa Pharmaceuticals Limited Convertible Term Notes

In December 2020, the Company entered into a convertible loan agreement (the Agreement) with Medicxi Growth, whereby the Company issued $5.0 million of unsecured convertible term notes to Medicxi Growth. The convertible loans were issued as a bridge financing in contemplation of completing the Series A financing. The convertible term notes had a stated interest rate of 8% per annum, which was not payable until settlement of the principal, being the maturity date June 29, 2021. Upon completion of the Company's Series A preferred financing in January 2021, the Company issued 568,181 shares of its Series A convertible preferred shares and settled all outstanding principal and unpaid interest associated with the convertible term notes.

LockBody Therapeutics Ltd Convertible Term Notes

In July 2019, LockBody entered into a convertible term note agreement to issue up to £5.0 million of convertible term notes of which £3.0 million was received in July 2019 and an additional £1.0 million was received in November 2020.

The convertible term notes had a stated interest rate of 2% per annum, which was not payable until settlement of the principal, being the maturity date of August 2, 2021.

The principal and accrued interest due under the convertible term notes converts:

- into the class of LockBody's shares issued in LockBody's next qualified fund raising, at a conversion price after applying a 20% discount to the purchase price per share paid for the shares.
- on a change of control, at a conversion price after applying a 50% discount to the purchase price per share paid for the shares.

As a result of the fact that the convertible term notes were convertible into a variable number of preferred shares, the Centessa Predecessor Group evaluated the conversion provision as a redemption feature. The redemption feature was evaluated as an embedded derivative and bifurcated from the convertible term notes due to the substantial premium paid upon redemption and accounted for as a derivative instrument. Upon bifurcating the redemption feature, the Group recorded aggregate debt discounts of $0.7 million that is recognized in interest expense over the term of the convertible term notes. The notes and the derivative liability were assumed in connection with the acquisition of the Centessa Subsidiaries in January 2021 and immediately forgiven. The forgiveness was recognized as $6.2 million contribution within the Successor consolidated statement of shareholders' equity during the period from January 30, 2021 through December 31, 2021.

Term loans with Ultrahuman

Prior to December 31, 2020, the Centessa Predecessor Group entered into term loan agreements with Ultrahuman Nine and Ultrahuman Ten, which are entities with common ownership with the Centessa Predecessor Group and with the Company. The term loans had a stated interest rate of 2% per annum above the Bank of England official rate and the outstanding balances was repayable on demand of the lenders. The Bank of England official rate was 0.10% at December 31, 2020.

An outstanding balance of the term loan with Ultrahuman Eleven was forfeited by the lender in February 2020, from which a gain on extinguishment of debt of $264,000 was recognized in the combined statements of operations and comprehensive loss for Centessa Predecessor Group during the twelve months ended December 31, 2020. During the twelve months ended December 31, 2020 and for the period from January 1, 2021 through January 29, 2021, the Centessa Predecessor Group recognized interest expense of $5,000, and $1,000, respectively, in connection with the Ultrahuman loans. During the period from January 30, 2021 through December 31, 2021, the Company recognized interest expense of $3,000, in connection with the loans. The loans were repaid in May 2021.

7. Commitments and Contingencies

Commitments

As of December 31, 2021, the Company had non-cancellable commitments for purchase of clinical materials, contract manufacturing, maintenance, and committed funding of up to $11.1 million, of which the Company expects to pay $10.9 million within one year and the remaining $0.2 million over one to three years. The amount and timing of these payments vary depending on the rate of progress of development. Future clinical trial expenses have not been included within the purchase commitments because they are contingent on enrollment in clinical trials and the activities required to be performed by the clinical sites.

Contingencies

From time to time, the Company may have certain contingent liabilities that arise in the ordinary course of its business activities. The Company accrues a liability for such matters when it is probable that future expenditures will be made, and such expenditures can be reasonably estimated.

Litigation

The Company is not a party to any litigation as of December 31, 2021, that, if determined adversely, would have a material adverse effect on its business and operations.

8. Ordinary and Convertible Preferred Shares

Series A, Series B, and Seed Series Convertible Preferred Shares

As of December 31, 2020, the Centessa Predecessor Group had Series A, Series B and Seed Series convertible preferred shares outstanding that were subject to redemption under certain "deemed liquidation" events, as defined in each of the Centessa Predecessor Group entities' articles of association. The Series A, Series B and Seed Series convertible preferred shares were classified outside of combined deficit as the deemed liquidation events are outside of the each of the Centessa Predecessor Group entities' control. Upon consummation of the acquisition of the Centessa Subsidiaries, all outstanding convertible preferred shares of the Centessa Predecessor Group were converted into ordinary shares of the Centessa Predecessor Group and ultimately were exchanged for ordinary shares of Centessa Pharmaceuticals plc at the time of acquisition. Immediately following the acquisition, the Centessa Subsidiaries became wholly-owned subsidiaries of the Centessa Pharmaceuticals plc whereby no convertible preferred shares were issued and outstanding at the Centessa Subsidiaries level.

Ordinary Shares

Ordinary shares confer upon its holders voting rights, the right to receive cash and stock dividends, if declared, and the right to share in excess assets upon liquidation of the Company. The holders of ordinary shares are entitled to one vote per share. In January 2021, the Company issued 45,137,984 ordinary shares in connection with the acquisition of the Centessa Subsidiaries of which 379,905 shares were replacement share-based awards and subject to future vesting requirements. Concurrent with the acquisition, the Company repurchased 4,450,000 of its A ordinary shares from several of its founders for a nominal amount.

Series A Convertible Preferred Shares

In January 2021, the Company sold 22,272,721 shares of its Series A convertible preferred shares at a purchase price of $11.00 per share in exchange for gross proceeds of $245.0 million. Upon completion of the Series A preferred financing, the Company issued 568,181 Series A convertible preferred shares upon settling the outstanding principal, unpaid interest, and bifurcated derivative liability associated with its convertible term notes. Immediately prior to the closing of the initial public offering in June 2021, the outstanding Series A Preferred Shares were converted on a one-to-one basis into Ordinary Shares without payment or further consideration.

The holders of Preferred Shares are entitled to dividends if and when declared by the Company's board of directors. As of December 31, 2021, no dividends have been declared and no Preferred Shares were outstanding. Each preferred share is entitled to a vote on an as-converted basis and certain significant Group events require majority approval from the preferred shareholders as a separate class.

Each preferred share is convertible, at the holder's option, into such number of ordinary shares on a one-to-one basis and equal to the conversion price then in effect. The conversion price is subject to adjustments for splits, dividends, distributions and other similar recapitalization events. Upon consummation of a qualified initial public offering of the Company's securities, the preferred shares would automatically convert into ordinary shares.

Upon the liquidation, sale, or merger of the Company (collectively, the Liquidation), the preferred shareholders are entitled to receive an amount equal to the original issuance price plus any unpaid declared dividends. If there are additional available assets from the liquidation after the initial liquidation payments, the remaining available assets will be distributed to the ordinary shareholders.

9. Share-based Compensation

Centessa Pharmaceuticals plc (Successor) Stock Option and Incentive Plan

In January 2021, the Company's board of directors approved the 2021 Stock Option and Incentive Plan (the "2021 Plan"). The 2021 Plan provides for the granting of ordinary shares, incentive stock options, non-qualified stock options, restricted share awards, and/or share appreciation rights to employees, directors, and other persons, as determined by the Company's board of directors. The number of shares authorized under the 2021 Plan was increased in May 2021 at the time of the IPO, whereby the total number of shares authorized under the 2021 Plan was 20,026,816, of which 6,949,243 shares were available for future grants as of December 31, 2021. Beginning on January 1, 2022 and each January 1 thereafter, the number of Shares reserved and available for issuance under the 2021 Plan shall be cumulatively increased by 5% of the number of Shares issued and outstanding on the immediately preceding December 31, or such lesser number as the board of directors may determine.

Share-based Compensation Expense

The Company and the Centessa Predecessor Group recorded share-based compensation expense in the following expense categories in the consolidated and combined statements of operations and comprehensive loss (amounts in thousands):

	Successor	Predecessor		
	Period from January 30, 2021 through December 31, 2021	Period from January 1, 2021 through January 29, 2021	Twelve Months Ended December 31, 2020	Twelve Months Ended December 31, 2019
Research and development	$ 5,896	$ —	$ 336	$ 236
General and administrative	8,956	—	—	—
	$ 14,852	$ —	$ 336	$ 236

Centessa Pharmaceuticals plc (Successor) Stock Options

The following table summarizes stock option activity for the period from January 30, 2021 through December 31, 2021:

	Number of Shares	Weighted-Average Exercise Price Per Share	Weighted-Average Remaining Contractual Term	Aggregate Intrinsic Value (in million)
Balance at January 30, 2021	—	$ —		
Granted	12,872,147	7.92		
Exercised	(133,389)	5.84		
Forfeited	(1,008,376)	6.41		
Balance at December 31, 2021	11,730,382	$ 8.07	9.2	$ 46.4
Exercisable at December 31, 2021	536,648	$ 4.82	7.8	$ 3.7
Vested and expected to vest at December 31, 2021	11,730,382	$ 8.07	9.2	$ 46.4

The weighted-average grant date fair value of options granted was $5.03 per share for the period from January 30, 2021 through December 31, 2021. The Company's stock options vest based on the terms in each award agreement, generally over four-year periods, and have a contractual term of ten years. As of December 31, 2021, the total unrecognized compensation expense related to unvested stock option awards was $48.6 million, which the Company expects to recognize over a weighted-average period of 2.2 years.

Based on the trading price of $11.26 per ADS, which was the closing price as of December 31, 2021, the aggregate intrinsic value of options as of December 31, 2021 was $46.4 million, of which $3.7 million was related to vested options.

During the period from January 30, 2021 through December 31, 2021, the fair value of each option was estimated on the date of grant using the weighted average assumptions in the table below:

Expected term (in years)	5.9
Expected stock price volatility	66.07 %
Risk-free interest rate	0.89 %
Expected dividend yield	- %

Centessa Pharmaceuticals plc (Successor) Restricted Share Awards

In connection with the acquisition of the Centessa Subsidiaries, the Company issued 379,905 ordinary shares subject to future vesting. For the period subsequent to the acquisition through December 31, 2021, the Company issued an additional 833,897 ordinary shares subject to future vesting to an employee. The fair value of the awards are based upon the estimated fair value of the Company's ordinary shares at the time of grant. As of December 31, 2021, no shares have been issued.

The following table summarizes ordinary share activity for the period from January 30, 2021 through December 31, 2021:

	Number of Shares	Weighted-Average Grant Date Fair Value Per Share
Unvested at January 30, 2021	—	
Granted	1,213,802	$ 15.57
Vested	(230,858)	
Unvested at December 31, 2021	982,944	

As of December 31, 2021, the total unrecognized compensation expense related to unvested ordinary shares was $14.5 million, which the Company expects to recognize over a weighted-average period of 2.2 years.

Centessa Predecessor Group Share-Based Plans

Prior to their acquisition in 2021, Z Factor and Morphogen-IX granted equity incentive shares, designated as B ordinary shares, to its employees, executives, and consultants and were purchased by the recipient for a nominal amount within one year from grant date. Generally, the awards vested 25% on the first anniversary of the grant date and ratably each quarter thereafter. Upon a change in control event or an initial public offering of the Z Factor and Morphogen-IX's ordinary shares, the B ordinary shares converted, on a 1:1 basis, into ordinary shares. Z Factor and Morphogen-IX account for B ordinary shares as restricted shares for share-based compensation purposes as the purchase price was nominal.

Centessa Pharmaceuticals plc (Successor) 2021 Employee Share Purchase Plan

In January 2021, the Company's board of directors approved the 2021 Employee Share Purchase Plan (the "2021 ESPP"). The initial number of shares reserved for issuance under the 2021 ESPP was 860,000. On January 1, 2022 and each January 1 thereafter, the number of Shares reserved and available for issuance under the ESPP shall be cumulatively increased by a number of shares equal to the lesser of: (i) 1% of the number of Shares issued and outstanding on the immediately preceding December 31; (ii) two times the initial number of shares reserved or (iii) such number of Shares as determined by the board of directors.

10. Licensing Arrangements

The Company acquired almost all of the licensing arrangements below in connection with the acquisition of the Centessa Subsidiaries. As of December 31, 2021, the Company had no milestone obligations recorded on its balance sheet under these arrangements. Included in research and development expenses in the Company's consolidated statement of operations and comprehensive loss for the period of January 30, 2021 to December 31, 2021 was aggregate incurred expenses of $1.7 million, reflecting the payment of a developmental milestone and the amortization of upfront costs. The Company does not expect payments related to these licensing arrangements over the next twelve months to be material to the Company's consolidated financial statements.

Palladio Biosciences Inc. Lixivaptan License Agreement

Palladio entered into an exclusive worldwide license agreement to further develop and commercialize Lixivaptan, a nonpeptide selective vasopressin V2 receptor antagonist which Palladio is currently developing for the treatment of ADPKD. Palladio has certain milestone obligations and certain royalty obligations arising in the event a Licensed Product is commercialized and the corresponding sales milestones are met. In relation to the purchase of the license, the Company is obligated to make certain contingent consideration payments to the seller. Such payments are structured as a tiered percentage of net sales with aggregate annual payment to the seller capped at $32.5 million. In addition, the Company is obligated to make sales-based milestones payments of up to $16.3 million and low single digit royalty payments (the first $19.0 million of which would be due to Pfizer). In the event Palladio sublicenses the ex-US rights to the Licensed Product to third parties, Palladio is further obligated to share any up-front payments and royalties it earns from such ex-US sublicenses, subject to certain caps. Certain other obligations arise if Palladio develops the Licensed Product for indications other than ADPKD.

Pega-One S.A.S. License Agreement with Hoffman-La Roche

Pega-One entered into, and subsequently amended, a license agreement with Hoffman La Roche Ltd, ("Roche"), to discover, develop and commercialize GA201 which is a glycoengineered anti-EGFR monoclonal antibody imgatuzumab which Pega-One is currently developing for the treatment of cutaneous squamous cell carcinoma and other solid tumor indications. The Company retains an exclusive worldwide sublicensable royalty bearing license. Pega-One is obligated to pay up to $40.0 million upon the achievement of development and regulatory milestones and up to $100.0 million in commercial milestones payments subject to potential increase if Pega-One undergoes a change in control transaction before a specified event for a specific indication. Pega-One is also obligated to pay Roche tiered royalties on net sales of the licensed product at rates ranging from a mid to high single percentage, on a country-by-country and product-by-product basis and is subject to adjustments in the event the Company sublicenses the approved technology. In addition, Pega-One is obligated to reimburse Roche for annual patent related costs incurred related to the license. The Company incurred research and development expenses of $1.0 million during the period January 30, 2021 to December 31, 2021.

If Pega-One intends to enter into certain strategic transactions, either involving an acquisition or other change of control of Pega-One or the grant of rights by Pega-One to a third party, to develop and commercialize imgatuzumab or a Licensed Product in certain specified territories, Roche has an exclusive right of first negotiation to enter into the applicable strategic transaction with Pega-One. In connection with the Reorganization, Pega-One and Roche entered into a waiver, pursuant to which the parties acknowledged that the Reorganization would constitute a change of control transaction and Roche agreed not to exercise its right of first negotiation. Notwithstanding such waiver, Roche's right of first negotiation would continue to apply for the period commencing on the completion of Centessa's acquisition of Pega-One until the earlier of the third anniversary of such acquisition, or until the first change of control of Pega-One following such acquisition.

Orexia Therapeutics Limited License and Collaborations Agreements

The Company is a party to an exclusive worldwide license agreement with Heptares Therapeutics Limited ("Heptares"), to further develop and commercialize, the licensed technology for orexin agonist as well as the intranasal orexin antagonist. The Company is responsible for supplying all active pharmaceutical ingredients and finished drug product for exploitation. The Company is obligated to make up to $33.4 million (£24.7 million at an exchange rate of 0.74) in payments upon the achievement of development and regulatory milestones. The Company is also obligated to make future commercial milestone payments at low to mid-single digit royalty rates for net product sales and is subject to

adjustment in the event the Centessa sublicenses the approved technology. In addition, the Company is obligated to fund any development related costs associated with the licensed technology.

Orexia entered into a world-wide exclusive research collaboration and license agreement with X-Chem, Inc ("X-Chem") to further develop and commercialize, the licensed technology for the orexin receptor. Orexia is responsible for supplying all active pharmaceutical ingredients and finished drug products for exploitation. Orexia is required to make payments contingent upon approval to advance to particular series. In October 2021, the agreement was amended to change the financial terms, reducing the milestones and royalty obligations for nominal consideration. After the amendment, Orexia is obligated to make up to $3 million in payments upon the achievement of development and regulatory milestones and $5 million upon the achievement of a commercial milestone.

In October 2021, the Company entered into a license agreement with Schrodinger to utilize its computational platform, which facilitates high-performance calculations for drug discovery to enable accurate prediction of potency at the target of interest. The collaboration will be enabled by Orexia's structural biology capabilities, including the stabilized OX2R protein exclusively licensed from Heptares, and high-resolution crystal structures in agonist conformation. Under the terms of the agreement, Orexia will be responsible for preclinical research activities, clinical development and commercialization of future product candidates discovered under the collaboration. Schrödinger received an upfront nonrefundable software access payment and may become eligible to receive certain development and regulatory milestones up to $35.0 million as well as commercial milestone payments up to $80.0 million, as well as low single digit royalties on global net sales. The Company incurred approximately $0.7 million in research and development expense related to the license agreement during the period from January 30, 2021 through December 31, 2021.

The Company is a party to a license agreement with OptiNose AS ("OptiNose"), whereby the Company was granted an exclusive, royalty-bearing, worldwide, non-transferable, sublicensable license to OptiNose's Exhalation Delivery System ("EDS"), and other intellectual property for the development, sale, import and manufacture of products containing orexin receptor agonist and/or orexin receptor positive modulator molecule(s) as the sole active pharmaceutical ingredient(s) for the treatment, diagnosis or prevention of human diseases or conditions associated primarily with orexin receptor agonism and orexin receptor positive modulation. The Company is solely responsible for all costs and activities related to its identification, development, and commercialization of products under the license agreement. The Company is obligated to make up to $8.0 million and $37.0 million in development and commercial milestone payments, respectively. In addition, OptiNose is eligible to receive tiered, low-to-mid single digit royalties based on net sales of any products successfully developed and commercialized under the license agreement.

PearlRiver License and Collaboration Agreements

In March 2019, PearlRiver Bio GmbH entered into an exclusive worldwide license agreement with Lead Discovery Center GmbH ("LDC"), to further develop and commercialize, the licensed technology for Exon20. Additionally, In June 2020, PearlRiver Bio entered to an assignment agreement with Lead Discovery Center GmbH and TU Dortmund (together the "Assignors"), involving small molecule inhibitors of C797 mutated EGFR and related inventions (C797, or Product). Under the assignment agreement, the Assignors each and jointly sold, assigned and transferred to PearlRiver Bio their entire right, title and interest to certain know-how, patent application, invention disclosures, chemical and biological materials, and data analyses related to C797. PearlRiver is responsible for supplying all active pharmaceutical ingredients and finished drug products for exploitation. PearlRiver is obligated to make up to $39.5 million (€34.8 million at an exchange rate of 0.88) in payments upon the achievement of development and regulatory milestones and $28.4 million (€25.0 million at an exchange rate of 0.88) upon the achievement of commercial milestones. PearlRiver is also obligated to make future commercial royalty payments at low to mid-single digit royalty rates for net product sales and is subject to adjustment in the event PearlRiver sublicenses the approved technology. In addition, PearlRiver is obligated to fund any patent related costs associated with the licensed technology.

Concurrent with entering into the license agreement, PearlRiver entered into a collaboration arrangement with LDC whereby LDC is providing ongoing research and development services to PearlRiver. PearlRiver recognizes research and development expenses associated with the collaboration as services are provided.

Janpix Limited License Agreement

In July 2017, Janpix Limited ("Janpix") entered into a license agreement with the Governing Council of the University of Toronto ("UT") related to direct small molecule modulators of signal transducer and activator of transcription

3 ("STAT 3") and signal transducer and activator of transcription 5 ("STAT 5"). Under the license agreement, Janpix obtained an exclusive, worldwide, sublicensable (subject to certain conditions) license, under certain patents and know-how ("Licensed Technology"), to research, develop, manufacture, market, sell, distribute and commercially exploit any licensed products for all uses in humans and animals (the "Field"). UT has retained for itself and certain other institutions, a customary right of use to the Licensed Technology for academic research and educational purposes. Additionally, Janpix has the right to exclusively license, with the right to sublicense, certain improvements to the Licensed Technology under the license agreement. Janpix also has an option right to negotiate a new license grant to any other intellectual property related to STAT 3 and/or STAT 5 inhibitors that is not considered an improvement under the license agreement. Janpix is obligated to make up to $15.0 million in development milestone payments and $15.0 million in commercial milestone payments. In addition, Janpix is obligated to make future commercial milestone payments at low to mid-single digit royalty rates for net product sales.

Other License and Collaboration Agreements

The Company is a party to other license and collaboration agreements to develop and commercialize intellectual property in addition to the agreements discussed above. In aggregate, Centessa is obligated to make up to $2.5 million in development milestone payments related to these other agreements.

11. Related Party Transactions

Master Services agreements with drug discovery companies affiliated with David Grainger

The Centessa Predecessor Group entered into Master Services agreements with certain drug discovery companies affiliated with David Grainger, who was appointed as the Company's Chief Innovation Officer in October 2021. These companies include RxCelerate Limited, RxBiologics Limited and The Foundry (Cambridge) Limited, of which David Grainger is a director and shareholder. The Company and the Centessa Predecessor Group incurred research and development costs associated with these contracts as follows in the consolidated and combined statements of operations and comprehensive loss (amounts in thousands):

	Successor	Predecessor		
	Period from January 30, 2021 through December 31, 2021	Period from January 1, 2021 through January 29, 2021	Twelve Months Ended December 31, 2020	Twelve Months Ended December 31, 2019
Research and development	$ 7,148	$ 418	$ 2,946	$ 2,251

Cost Reimbursements

During the period from January 30, 2021 through December 31, 2021, the Company (Successor) reimbursed an aggregate of $1.4 million to several shareholders for costs paid on behalf of the Company (Successor) in connection with acquisition of the Centessa Subsidiaries and the sale of the Company (Successor) Series A preferred shares.

12. Income Taxes

The tax effects of temporary differences that gave rise to significant portions of the deferred tax assets and liabilities were as follows (amounts in thousands):

	Successor	Predecessor
	December 31, 2021	December 31, 2020
Deferred tax asset		
Tax loss carryforwards	$ 32,983	$ 2,323
Capitalized research and development	8,734	—
Research and development credits	6,967	—
Other	1,016	16
Total deferred tax asset	$ 49,700	$ 2,339
Valuation allowance	(49,045)	(2,339)
Deferred tax asset, net of allowance	$ 655	$ —

The Company regularly assesses its ability to realize its deferred tax assets. Assessing the realization of deferred tax assets requires significant judgment. In determining whether its deferred tax assets are more likely than not realizable, the Company evaluated all available positive and negative evidence, and weighed the evidence based on its objectivity. After consideration of the evidence, including the Company's history of cumulative net losses in the U.K., France, Germany and the USA, the Company has concluded that it is more likely than not that the Company will not realize the benefits of its U.K., French and German deferred tax assets and accordingly the Company has provided a valuation allowance for the full amount of the net deferred tax assets in those territories. The Company has also concluded that it is more likely than not it will not realize the benefits of the deferred tax assets in its principal operating entity in the United States and has provided a valuation allowance for the full amount of the net deferred tax asset in that entity. The Company has considered the Company's history of cumulative net profits in two of its other operating entities in the United States, which carry out services for other entities in the group, estimated those entities' future taxable income and concluded that it is more likely than not that the Company will realize the benefits of the deferred tax assets in those entities, and has not provided a valuation allowance against the net deferred tax assets in those entities.

For the period from January 30, 2021 to December 31, 2021, the valuation allowance increased by $30.5 million. On January 29, 2021, the Company acquired $16.1 million in net deferred tax assets in its acquisitions of the Centessa Subsidiaries, primarily comprised of tax loss carryforwards and research and development tax credits. A full valuation allowance was recorded against these acquired deferred tax assets as it was concluded that it was not more likely than not that the Company would realize the benefits of the deferred tax assets, resulting in the remaining increase in total valuation allowance from December 31, 2020 to December 31, 2021. A full valuation allowance had been recorded against the Predecessor Group’s net deferred tax assets as of December 31, 2020. The valuation allowance increased by $1.3 million during the year ended December 31, 2020.

The income tax provision consists of the following (amounts in thousands):

	Successor	Predecessor
	December 31, 2021	December 31, 2020
Federal		
Current	$ 581	$ —
Deferred	(495)	—
State		
Current	188	—
Deferred	(160)	—
Foreign		
Current	—	—
Deferred	—	—
Income tax provision	$ 114	$ —

A reconciliation of the United Kingdom (“UK”) income tax rate to the Company’s effective tax rate is as follows:

	Successor	Predecessor	
	Period from January 30, 2021 through December 31, 2021	Twelve Months Ended December 31, 2020	Twelve Months Ended December 31, 2019
Statutory tax rate benefit	19 %	19 %	19 %
Non-deductible write-off of in-process R&D	(11)%	— %	— %
Other non-deductible expenses	(2)%	(1)%	(1)%
Enhanced research and development expenses	3 %	15 %	19 %
Losses surrendered for tax incentive	(5)%	(28)%	(33)%
Non-taxable research and development incentive	2 %	4 %	5 %
Change in tax rate	1 %	1 %	(1)%
Effect of overseas tax rates	1 %	— %	— %
Change in valuation allowance	(8)%	(11)%	(8)%
Effective income tax rate	— %	— %	— %

The following table summarizes carryforwards of federal and local net operating losses (NOL) and research tax credits (amounts in thousands):

	Successor	Predecessor
	December 31, 2021	December 31, 2020
UK	$ 82,156	$ 12,393
US	$ 34,059	$ —
France	$ 19,710	$ —
Germany	$ 11,062	$ —

The Company will recognize interest and penalties related to uncertain tax positions as a component of income tax expense. As of December 31, 2021, the Company had no accrued interest or penalties related to uncertain tax positions and no amounts have been recognized in the Company's Consolidated Statements of Operations and Comprehensive Loss. Due to NOL and tax credit carry forwards that remain unutilized, income tax returns for tax years from 2019 and 2020 remain subject to examination by the taxing jurisdictions. The NOL carryforwards remain subject to review until utilized. The carryforwards in the UK, France and Germany do not expire, in the US, while the majority of Federal NOLs do not expire, certain Federal NOLs ($3.2 million) and all State NOLs ($13.5 million) expire beginning in 2036.

Section 382 of the Internal Revenue Code of 1986, as amended (the Code) provides for limitation on the use of net operating loss and research and development tax credit carryforwards following certain ownership changes (as defined in Code) that could limit the Company's ability to utilize these carryforwards, in relation to its principal operating unit in the US. Pursuant to Section 382 of the Code, an ownership change occurs when the stock ownership of a 5% stockholder increases by more than 50% over a three-year testing period. The principal US operating unit may have experienced various ownership changes, as defined by the Code, as a result of past financings and may in the future experience an ownership change. Accordingly, the Company's ability to utilize the aforementioned carryforwards may be limited. Additionally, U.S. tax laws limit the time during which these carryforwards may be applied against future taxes. The Company has not yet performed an Internal Revenue Code Section 382 study in connection with changes in control of its principal operating unit in the US.

13. Subsequent Events

On February 7, 2022, the Company entered into a 10-year office lease for its new corporate headquarters in Boston, Massachusetts. The fixed annual rent will be approximately $1.6 million in 2023 and will escalate to approximately $1.9 million in Year 10. The company expects to have a right of use of the office space later in 2022.

On February 18, 2022, the Company commenced dosing in its Phase 3 clinical trial evaluating lixivaptan as a potential treatment for ADPKD. Such event was the milestone trigger for payment of contingent value rights originally issued to the former shareholders and option holders of the Company's subsidiary, Palladio Biosciences, Inc., in connection with its acquisition by Centessa in January 2021. The contingent value rights entitled such holders to a number of ordinary shares of the Company (including in the form of ADSs) in an aggregate amount of approximately $39.7 million based on the Volume Weighted Average Price of the Company's ADSs over the five day trading period ending on the date of the milestone trigger. On March 8, 2022, the Company and the representative of the contingent value rights holders agreed that 3,938,423 represents the aggregate number of ordinary shares, issued as ADSs, to be issued in satisfaction of such contingent value rights, to the former shareholders and option holders of Palladio Biosciences, Inc. The number of ADSs issued to employee recipients reflected in this figure is net of tax withholding, which the Company satisfied with cash payments to tax authorities. The ADSs were issued in exchange for the previously-issued contingent value rights of the Company. The Company will recognize a remaining adjustment of fair value (approximately a $2 million charge) in its consolidated statement of operations and comprehensive loss in its first quarter of 2022.

Item 9. Changes in and Disagreements With Accountants on Accounting and Financial Disclosures

None

Item 9A. Controls and Procedures

Evaluation of Disclosure Controls and Procedures

Our management, with the participation of our Chief Executive Officer, Chief Accounting Officer and Chief Financial Officer (our principal executive officer, principal accounting officer and principal financial officer, respectively), evaluated the effectiveness of our disclosure controls and procedures as of December 31, 2021. The term "disclosure controls and procedures," as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended ("Exchange Act"), means controls and other procedures of a company that are designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is recorded, processed, summarized and reported, within the time periods specified in the SEC's rules and forms.

Based on the evaluation of our disclosure controls and procedures as of December 31, 2021, our Chief Executive Officer, Chief Accounting Officer and Chief Financial Officer concluded that our disclosure controls and procedures were effective as of December 31, 2021. Our management has concluded that the financial statements included in this report present fairly, in all material respects, our financial position, results of operations and cash flows in conformity with GAAP.

Material Weakness Remediation

Material weaknesses in our internal controls over financial reporting were identified and disclosed in our final prospectus for our initial public offering dated June 2, 2021 and in our 10-Qs for the periods ended June 30, 2021 and September 30, 2021 were remediated as of December 31, 2021. As is common in the transition from several small private companies to a public reporting company, there were not enough qualified accounting personnel, inadequate segregation of duties and insufficient financial reporting processes and oversight, all of which contributed to the material weaknesses. During 2021, we made progress in implementing measures designed to improve our internal control over financial reporting, including: hiring additional qualified finance and accounting personnel, formalizing our internal control processes, policies and documentation, standardizing and improving our account reconciliations, strengthening supervisory reviews of financial information by our financial management, and enhancing our governance, compliance and risk management framework and policies. We have engaged financial consultants to supplement our financial reporting resources as needed. The measures we implemented are subject to on-going management review and audit committee oversight. We continue to implement measures to enhance our internal controls.

Management's Annual Report on Internal Control Over Financial Reporting

Due to a transition period established by SEC rules applicable to newly public companies, our management is not required to evaluate the effectiveness of our internal control over financial reporting until the filing of our Annual Report on Form 10-K for the year ended December 31, 2022.

Attestation Report of the Registered Public Accounting Firm

This Annual Report on Form 10-K does not include an attestation report of our registered public accounting firm due to an exemption for "emerging growth companies."

Changes in Internal Control over Financial Reporting

Other than the changes implemented to remediate the material weaknesses noted above and to improve the control environment, no change in our internal control over financial reporting (as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act) occurred during the three months ended December 31, 2021 that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

Item 9B. Other Information

Amendment and Restatement of Executive Officer Employment Agreements

The following information is being included in this Item 9B in lieu of filing such information on a Current Report on Form 8-K under Item 5.02. Compensatory Arrangements of Certain Officers.

On March 29, 2022, in connection with the regularly scheduled review of executive compensation, the compensation committee of our board of directors approved the amendment and restatement of the employment agreements of Saurabh Saha, M.D., Ph.D. and Gregory Weinhoff, M.D., M.B.A. The amended and restated employment agreements, which are effective as of March 30, 2022, reflect an increased annual salary and a revised severance package (described below) for each named executive officer. All other terms remain the same.

Each named executive officer's amended and restated employment agreement provides that if we terminate such individual's employment outside of the one year period following a sale event other than for cause, death or disability, the individual will receive the following: (i) 12 months' salary continuation; and (ii) payment of COBRA continuation coverage premiums for 12 months. Each named executive officer's amended and restated employment agreement provides that if such individual's employment is terminated by us other than for cause, death or disability or by the individual with good reason within the one year period following a sale event, the individual will receive the following: (a) a lump sum payment equal to 18 months' base salary for with respect to Dr. Saha, and 12 months' base salary with respect to Dr. Weinhoff; (b) a lump sum equal to any accrued bonus amounts plus 150% of the target bonus with respect to Dr. Saha, 100% of the target bonus with respect to Dr. Weinhoff; (c) 100% acceleration of unvested equity awards for future awards (awards granted prior to March 30, 2022 will continue in accordance with their terms); and (d) payment of COBRA continuation coverage premiums, or other equivalent benefits in jurisdictions outside of the U.S., for the above durations applicable to such individuals. In addition, each named executive officer's amended and restated employment agreement provides that if any payments or benefits received by the named executive officer or otherwise would constitute "parachute payments" within the meaning of Section 280G of the Code and be subject to excise taxes imposed by Section 4999 of the Code, such amount will either be delivered in full or reduced so as not to be subject to excise taxation, whichever amount is higher.

The amended and restated employment agreements attached to this Annual Report as exhibits will supersede and replace the current employment agreements previously filed with the Securities and Exchange Commission.

Item 9C. Disclosure Regarding Foreign Jurisdictions that Prevent Inspections.

Not applicable.

Part III

Item 10. Directors, Executive Officers and Corporate Governance

The information required by this item will be contained in our definitive proxy statement to be filed with the SEC in connection with our 2022 annual meeting of stockholders (the "Proxy Statement"), or an amendment on Form 10-K/A filed with the SEC within 120 days after the end of our fiscal year, which is expected to be filed no later than 120 days after the end of our fiscal year ended December 31, 2021, and is incorporated in this report by referen**ce.**

Item 11. Executive Compensation

The information required by this item will be contained in our Proxy Statement, when filed, or an amendment on Form 10-K/A filed with the SEC within 120 days after the end of our fiscal year, and is incorporated in this report by reference.

Item 12. Security Ownership of Certain Beneficial Owner and Management and Related Stockholder Matters

The information required by this item will be contained in our Proxy Statement, when filed, or an amendment on Form 10-K/A filed with the SEC within 120 days after the end of our fiscal year, and is incorporated in this report by reference.

Item 13. Certain Relationships and Related Transactions, and Director Independence

The information required by this item will be contained in our Proxy Statement, when filed, or an amendment on Form 10-K/A filed with the SEC within 120 days after the end of our fiscal year, and is incorporated in this report by reference.

Item 14. Principal Accounting Fees and Services

Our independent registered public accounting firm is KPMG LLP, Boston, MA, Auditor Firm ID: 185.

The other information required by this item will be contained in our Proxy Statement, when filed, or an amendment on Form 10-K/A filed with the SEC within 120 days after the end of our fiscal year, and is incorporated in this report by reference.

Part IV

Item 15. Exhibits and Financial Statement Schedules.

(a) Exhibits:

Exhibit number	Description of exhibit
3.1*	Articles of Association of the registrant, as currently in effect (incorporated by reference to Exhibit 3.2 to the Registrant's Registration Statement on Form S-1 (File No. 333-255393)).
4.1	Form of Deposit Agreement (incorporated by reference to Exhibit 4.1 to the Registrant's Registration Statement on Form S-1 (File No. 333-255393)).
4.2	Form of American Depositary Receipt (included in Exhibit 4.1) (incorporated by reference to Exhibit 4.2 to the Registrant's Registration Statement on Form S-1 (File No. 333-255393)).
4.3	Description of Registrant's Securities.
10.1	Registration Rights Agreement by and among the registrant and the Investors listed therein, dated January 29, 2021 (incorporated by reference to Exhibit 10.1 to the Registrant's Registration Statement on Form S-1 (File No. 333-255393)).
10.2#	Senior Executive Cash Incentive Bonus Plan (incorporated by reference to Exhibit 10.2 to the Registrant's Registration Statement on Form S-1 (File No. 333-255393)).
10.3#	2021 Employee Share Purchase Plan (incorporated by reference to Exhibit 10.3 to the Registrant's Registration Statement on Form S-1 (File No. 333-255393)).
10.4#	2021 Share Option Plan and forms of award agreements thereunder (incorporated by reference to Exhibit 10.4 to the Registrant's Registration Statement on Form S-1 (File No. 333-255393)).
10.5#	Employment Agreement, dated as of March 30, 2022, between the registrant and Saurabh Saha.
10.6#	Form of Deed of Indemnity between the registrant and each of its directors and executive officers (incorporated by reference to Exhibit 10.7 to the Registrant's Registration Statement on Form S-1 (File No. 333-255393)).
10.7†	License Agreement dated March 15, 2004 (as amended) between Cardiokine Biopharma LLC (a subsidiary of Palladio) and Wyeth LLC (now a subsidiary of Pfizer) (incorporated by reference to Exhibit 10.8 to the Registrant's Registration Statement on Form S-1 (File No. 333-255393)).
10.8†	License Agreement dated December 7, 2016 (as amended) between ApcinteX and Cambridge Enterprise Limited (incorporated by reference to Exhibit 10.9 to the Registrant's Registration Statement on Form S-1 (File No. 333-255393)).
10.9†	License Agreement dated January 2, 2020 (as amended) between Pega-One and Hoffman-la Roche (incorporated by reference to Exhibit 10.10 to the Registrant's Registration Statement on Form S-1 (File No. 333-255393)).
10.10†	License Agreement dated February 4, 2015 (as amended) between Z Factor and Cambridge Enterprise Limited (incorporated by reference to Exhibit 10.11 to the Registrant's Registration Statement on Form S-1 (File No. 333-255393)).

10.11	Contingent Value Rights Agreement, dated as of January 23, 2021, by and among the Registrant, Palladio Biosciences, Inc. and the representative of the holders of contingent value rights under such agreement (incorporated by reference to Exhibit 10.12 to the Registrant's Registration Statement on Form S-1 (File No. 333-255393)).
10.12†	Contribution agreement, dated January 23, 2021, by and between ApcinteX Limited, United Medicines Biopharma Limited and the other parties thereto (incorporated by reference to Exhibit 10.13 to the Registrant's Registration Statement on Form S-1 (File No. 333-255393)).
10.13†	Contribution agreement, dated January 23, 2021, by and between Capella Bioscience LTD, United Medicines Biopharma Limited and the other parties thereto (incorporated by reference to Exhibit 10.14 to the Registrant's Registration Statement on Form S-1 (File No. 333-255393)).
10.14†	Contribution agreement, dated January 23, 2021, by and between Inexia Limited, United Medicines Biopharma Limited and the other parties thereto (incorporated by reference to Exhibit 10.15 to the Registrant's Registration Statement on Form S-1 (File No. 333-255393)).
10.15†	Contribution agreement, dated January 23, 2021, by and between Janpix Limited, United Medicines Biopharma Limited and the other parties thereto (incorporated by reference to Exhibit 10.16 to the Registrant's Registration Statement on Form S-1 (File No. 333-255393)).
10.16†	Contribution agreement, dated January 23, 2021, by and between LockBody Therapeutics Ltd, United Medicines Biopharma Limited and the other parties thereto (incorporated by reference to Exhibit 10.17 to the Registrant's Registration Statement on Form S-1 (File No. 333-255393)).
10.17†	Contribution agreement, dated January 23, 2021, by and between Morphogen-IX Limited, United Medicines Biopharma Limited and the other parties thereto (incorporated by reference to Exhibit 10.18 to the Registrant's Registration Statement on Form S-1 (File No. 333-255393)).
10.18†	Contribution agreement, dated January 23, 2021, by and between Orexia Limited, United Medicines Biopharma Limited and the other parties thereto (incorporated by reference to Exhibit 10.19 to the Registrant's Registration Statement on Form S-1 (File No. 333-255393)).
10.19†	Contribution agreement, dated January 23, 2021, by and between Z Factor Limited, United Medicines Biopharma Limited and the other parties thereto (incorporated by reference to Exhibit 10.20 to the Registrant's Registration Statement on Form S-1 (File No. 333-255393)).
10.20†	Contribution Agreement, dated January 23, 2020, by and between Pega-One, United Medicines Biopharma Limited and the other parties thereto (incorporated by reference to Exhibit 10.21 to the Registrant's Registration Statement on Form S-1 (File No. 333-255393)).
10.21†	Contribution Agreement, dated December 31, 2020 (as amended), by and between PearlRiver Bio GmbH, United Medicines Biopharma Limited, and the other parties thereto (incorporated by reference to Exhibit 10.22 to the Registrant's Registration Statement on Form S-1 (File No. 333-255393)).
10.22#	Employment Agreement, dated as of March 30, 2022, between the registrant and Gregory M. Weinhoff, MD, MBA.
10.23†#	Incentivization agreement, dated January 23, 2021, by and between LockBody Therapeutics Ltd, United Medicines Biopharma Limited and the other parties thereto (incorporated by reference to Exhibit 10.24 to the Registrant's Registration Statement on Form S-1 (File No. 333-255393)).
10.24†#	Incentivization agreement, dated January 23, 2021, by and between Morphogen-IX Limited, United Medicines Biopharma Limited and the other parties thereto (incorporated by reference to Exhibit 10.25 to the Registrant's Registration Statement on Form S-1 (File No. 333-255393)).

10.25†#	Incentivization agreement, dated January 23, 2021, by and between Z Factor Limited, United Medicines Biopharma Limited and the other parties thereto (incorporated by reference to Exhibit 10.26 to the Registrant's Registration Statement on Form S-1 (File No. 333-255393)).
10.26†	Stock Purchase Agreement, dated July 26, 2016, by and between Chiesi USA, Inc., Palladio Acquisition Sub, Inc. and Palladio Biosciences, Inc. (incorporated by reference to Exhibit 10.27 to the Registrant's Registration Statement on Form S-1 (File No. 333-255393)).
10.27†	Agreement and Plan of Merger, dated December 28, 2011, by and between Cornerstone Therapeutics Inc., Cohesion Merger Sub, Inc., Cardiokine, Inc., and Shareholder Representative Services LLC (incorporated by reference to Exhibit 10.28 to the Registrant's Registration Statement on Form S-1 (File No. 333-255393)).
10.28†	Assignment and Bill of Sale, dated February 24, 2017, by and between Care Capital Investments II, LP, Care Capital Offshore Investments II, LP, and Palladio Biosciences, Inc. (incorporated by reference to Exhibit 10.29 to the Registrant's Registration Statement on Form S-1 (File No. 333-255393)).
10.29†	Assignment and Bill of Sale, dated June 2017, by and between Perseus-Soros BioPharmaceutical Fund Liquidating Trust and Palladio Biosciences, Inc. (incorporated by reference to Exhibit 10.30 to the Registrant's Registration Statement on Form S-1 (File No. 333-255393)).
10.30†	Assignment and Bill of Sale, dated November 7, 2017, by and between Healthcare Ventures VII, L.P., and Palladio Biosciences, Inc. (incorporated by reference to Exhibit 10.31 to the Registrant's Registration Statement on Form S-1 (File No. 333-255393)).
10.31†	Assignment and Bill of Sale, dated December 20, 2017, by and between Advent Private Equity Fund III A, Advent Private Equity Fund III B, Palladio Biosciences, Inc and the other parties thereto (incorporated by reference to Exhibit 10.32 to the Registrant's Registration Statement on Form S-1 (File No. 333-255393)).
10.32#	Employment Agreement, dated as of March 30, 2022, between the registrant and Marella Thorell.
10.33	Note Purchase Agreement, dated October 1, 2021 by and between the Registrant, the Purchasers party thereto and Cocoon SA LLC (incorporated by reference to Exhibit 10.1 to the Registrant's Quarterly Report on Form 10-Q filed on November 15, 2021 (File No. 001-40445).
10.34	Amendment to Note Purchase Agreement and Waiver, dated February 11, 2022, by and between the Registrant, the Purchasers party thereto and Cocoon SA LLC.
10.35	One Federal Street, Boston, MA lease, dated February 7, 2022, by and between One Federal, L.P. and the Registrant.
21.1	Subsidiaries of the registrant (incorporated by reference to Exhibit 21.1 to the Registrant's Registration Statement on Form S-1 (File No. 333-255393)).
23.1	Consent of KPMG LLP, independent registered public accounting firm.
24.1	Power of Attorney (included on signature page to this Annual Report on Form 10-K)
31.1	Certification of Principal Executive Officer Pursuant to Rules 13a-14(a) and 15d-14(a) under the Securities Exchange Act of 1934, as Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
31.2	Certification of Principal Financial Officer Pursuant to Rules 13a-14(a) and 15d-14(a) under the Securities Exchange Act of 1934, as Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.

32.1*	Certification of Principal Executive Officer Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
32.2*	Certification of Principal Financial Officer Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
101 INS	XBRL Instance Document.
101 SCH	XBRL Taxonomy Extension Schema Document.
101 CAL	XBRL Taxonomy Extension Calculation Document.
101 DEF	XBRL Taxonomy Extension Definition Linkbase Document.
101 LAB	XBRL Taxonomy Extension Labels Linkbase Document
101 PRE	XBRL Taxonomy Extension Presentation Link Document
104	Cover Page Interactive Data File (formatted as inline XBRL with applicable taxonomy extension information contained in Exhibits 101.)

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* This certification will not be deemed "filed" for purposes of Section 18 of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), or otherwise subject to the liability of that section. Such certification will not be deemed to be incorporated by reference into any filing under the Securities Act of 1933, as amended, or the Exchange Act, except to the extent specifically incorporated by reference into such filing.

† Portions of this exhibit (indicated by "[***]") have been omitted pursuant to Item 601(b)(10) of Regulation S-K.

# Indicates a management contract or any compensatory plan, contract or arrangement.

(b) Financial Statements:

The financial statements of the Registrant are included in Item 8 of this Annual Report on Form 10-K.

(c) *Financial Statements Schedules:*

Schedules have been omitted because the information required to be set forth therein is not applicable or is shown in the financial statements or notes thereto.

Item 16. Form 10-K Summary

None.

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned thereunto duly authorized.

CENTESSA PHARMACEUTICALS PLC

Date: March 30, 2022

By: /s/ Saurabh Saha, M.D., Ph.D.

Name: Saurabh Saha, M.D., Ph.D.

Title: *Chief Executive Officer (Principal Executive Officer)*

SIGNATURES

Each person whose individual signature appears below hereby constitutes and appoints Saurabh Saha, M.D., Ph.D. and Gregory Weinhoff, M.D., M.B.A. and each of them, with full power of substitution and resubstitution and full power to act without the other, as his or her true and lawful attorney-in-fact and agent to act in his or her name, place and stead and to execute in the name and on behalf of each person, individually and in each capacity stated below, and to file any and all amendments to this Annual Report on Form 10-K, and to file the same, with all exhibits thereto, and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents, and each of them, full power and authority to do and perform each and every act and thing, ratifying and confirming all that said attorneys-in-fact and agents or any of them or their or his substitute or substitutes may lawfully do or cause to be done by virtue thereof.

Pursuant to the requirements of the Securities Exchange Act of 1934, this Annual report has been signed by the following persons in the capacities and on the dates indicated.

Signature	Title	Date
/s/ Saurabh Saha, M.D., Ph.D. Name: Saurabh Saha, M.D., Ph.D.	Chief Executive Officer (Principal Executive Officer)	March 30, 2022
/s/ Gregory Weinhoff, M.D., M.B.A. Name: Gregory Weinhoff, M.D., M.B.A.	Chief Financial Officer (Principal Financial Officer)	March 30, 2022
/s/ Marella Thorell Name: Marella Thorell	Chief Accounting Officer (Principal Accounting Officer)	March 30, 2022
/s/ Francesco De Rubertis, Ph.D. Name: Francesco De Rubertis, Ph.D.	Director	March 30, 2022
/s/ Arjun Goyal, M.D., M.Phil, M.B.A. Name: Arjun Goyal, M.D., M.Phil, M.B.A.	Director	March 30, 2022
/s/ Aaron Kantoff Name: Aaron Kantoff	Director	March 30, 2022
/s/ Brett Zbar, M.D Name: Brett Zbar, M.D.	Director	March 30, 2022
/s/ Mary Lynne Hedley, Ph.D. Name: Mary Lynne Hedley, Ph.D.	Director	March 30, 2022
/s/ Samarth Kulkarni, Ph.D. Name: Samarth Kulkarni, Ph.D.	Director	March 30, 2022
/s/ Carol Stuckley, M.B.A. Name: Carol Stuckley, M.B.A.	Director	March 30, 2022