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, 2020

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 001-38692

EQUILLIUM, INC.

(Exact name of registrant as specified in its Charter)

Delaware	**82-1554746**
(State or other jurisdiction of incorporation or organization)	**(I.R.S. Employer Identification No.)**
2223 Avenida de la Playa, Suite 105 La Jolla, CA	**92037**
(Address of principal executive offices)	**(Zip Code)**

Registrant's telephone number, including area code: (858) 412-5302

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

Title of each class	**Trading Symbol**	**Name of each exchange on which registered**
Common Stock, par value $0.0001 per share	EQ	The Nasdaq Global Market

Securities registered pursuant to 12(g) of the Act: None

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

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or 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 every Interactive Data File required to be submitted 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 such files). YES ☒ NO ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 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 Exchange Act). YES ☐ NO ☒

The aggregate market value of the voting and non-voting common equity held by non-affiliates of the registrant as of June 30, 2020 (the last business day of the registrant's most recently completed second fiscal quarter) was approximately $18.8 million based on the closing price of the registrant's common stock on June 30, 2020 of $2.95 per share, as reported by the Nasdaq Global Market.

As of March 19, 2021, there were 29,040,270 shares of the registrant's common stock outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

Part III of this Annual Report on Form 10-K incorporates by reference certain information from the registrant's definitive Proxy Statement for its 2021 annual meeting of shareholders, 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, 2020. 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.

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SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This Annual Report on Form 10-K contains forward-looking statements. The forward-looking statements are contained principally in the sections entitled "Risk Factors," "Management's Discussion and Analysis of Financial Condition and Results of Operations" and "Business." These statements relate to future events or to our future financial performance and involve known and unknown risks, uncertainties and other factors which may cause our actual results, performance or achievements to be materially different from any future results, performance or achievements expressed or implied by the forward-looking statements. Forward-looking statements include, but are not limited to, statements about:

- our plans to research, develop and commercialize itolizumab (EQ001) and any future product candidates;
- our ability to obtain and maintain regulatory approval of itolizumab (EQ001) in any of the indications for which we plan to develop it;
- our estimated timeline for announcing data from our three ongoing clinical trials, for interacting with regulatory authorities, and for initiating clinical trials in 2021;
- our ability to obtain funding for our operations, including funding necessary to commence and complete the clinical trials of itolizumab (EQ001);
- the success, cost, and timing of our product development activities, including our ongoing and planned clinical trials of itolizumab (EQ001);
- the beneficial characteristics, safety, efficacy, and therapeutic effects of itolizumab (EQ001);
- the size of the markets for our product candidates, and our ability to serve those markets;
- our ability to successfully commercialize itolizumab (EQ001);
- the rate and degree of market acceptance of itolizumab (EQ001);
- our ability to develop and maintain sales and marketing capabilities, whether alone or with potential future collaborators;
- regulatory developments in the United States;
- the performance of our third-party service providers, including Biocon Limited and other suppliers and manufacturers;
- the safety, efficacy and market success of competing therapies that are or become available;
- our ability to attract and retain key scientific or management personnel;
- our expectations regarding the period during which we qualify as an emerging growth company under the Jumpstart Our Business Startups Act, as amended, or JOBS Act;
- our ability to attract and retain collaborators with development, regulatory and commercialization expertise;
- the accuracy of our estimates regarding expenses, future revenues, capital requirements and needs for additional financing; and
- our expectations regarding our ability to obtain and maintain intellectual property protection for itolizumab and our ability to operate our business without infringing on the intellectual property rights of others.

In some cases, you can identify these statements by terms such as "anticipate," "believe," "could," "estimate," "expects," "intend," "may," "plan," "potential," "predict," "project," "should," "will," "would" or the negative of those terms, and similar expressions that convey uncertainty of future events or outcomes. These forward-looking statements reflect our management's beliefs, opinions and views with respect to future events and are based on estimates, assumptions and information available to us as of the date of this Annual Report on Form 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. These statements are inherently uncertain and are subject to risks and uncertainties. We discuss many of these risks in greater detail under the

heading “Risk Factors.” Moreover, we operate in a very competitive and rapidly changing environment. New risks emerge from time to time. It is not possible for our management to predict all risks, nor can we assess the impact of all factors on our business or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those contained in any forward-looking statements we may make. Given these uncertainties, you should not place undue reliance on these forward-looking statements.

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

Except as required by law, we assume no obligation to update these forward-looking statements publicly, or to update the reasons actual results could differ materially from those anticipated in any forward-looking statements, whether as a result of new information, future events or otherwise.

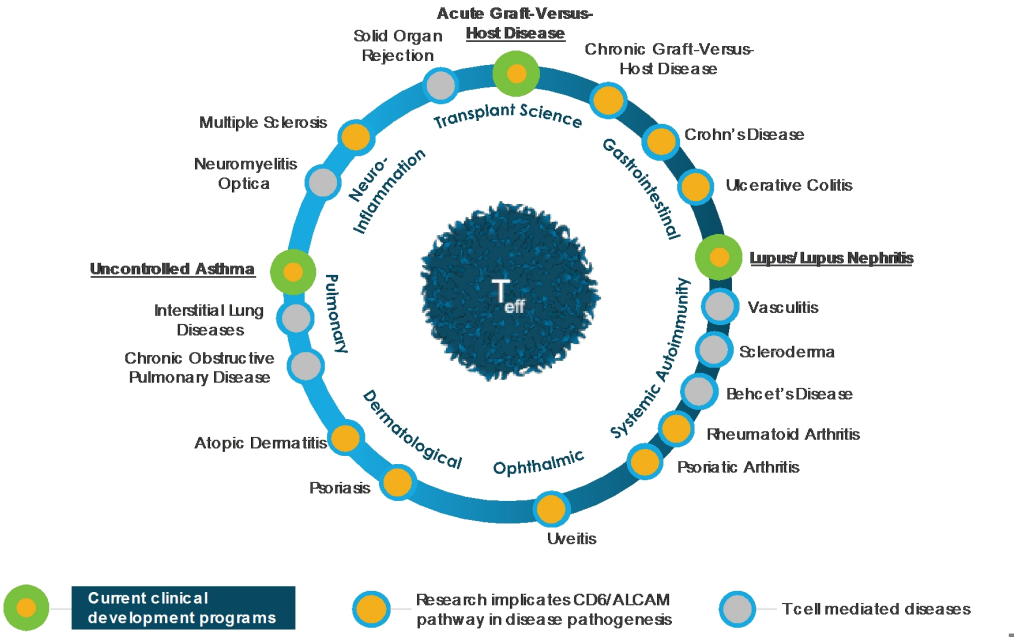
PART I

Item 1. Business.

Overview

We are a clinical-stage biotechnology company leveraging deep understanding of immunobiology to develop products to treat severe autoimmune and inflammatory, or immuno-inflammatory, disorders with high unmet medical need. Our initial product candidate, itolizumab (EQ001), is a clinical-stage, first-in-class monoclonal antibody that selectively targets the novel immune checkpoint receptor CD6. CD6 plays a central role in the modulation of effector T cell, or T_{eff} cell, activity and trafficking. Activated T_{eff} cells drive a number of immuno-inflammatory diseases across therapeutic areas including transplant science, systemic autoimmunity, pulmonary, neurologic, gastrointestinal, renal, vascular, ophthalmic and dermatologic disorders. Therefore, we believe itolizumab (EQ001) may have broad therapeutic utility in treating a large and diverse set of severe immuno-inflammatory diseases.

T cell mediated diseases



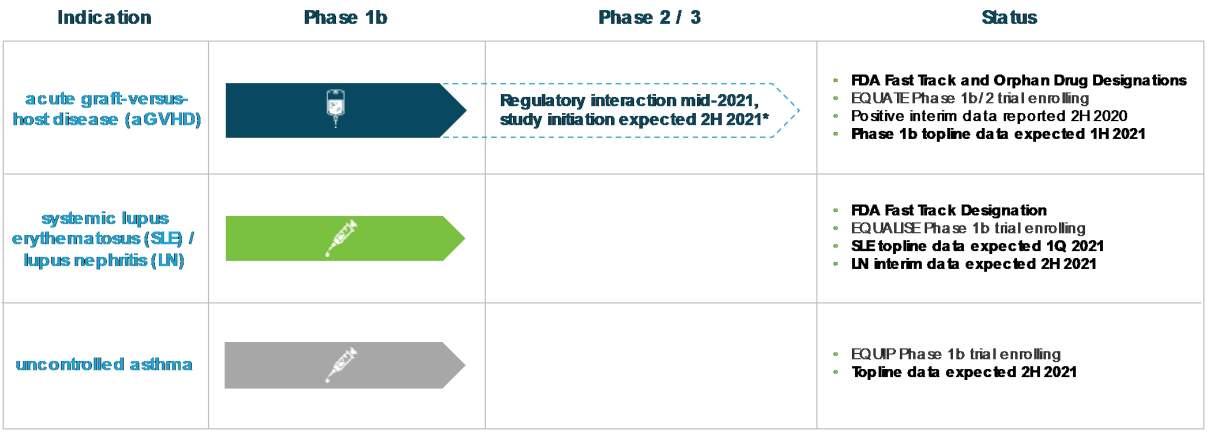
Our pipeline is focused on developing itolizumab (EQ001) as a potential best-in-class, disease modifying treatment for multiple severe immuno-inflammatory disorders. We currently have active clinical development programs for itolizumab (EQ001) for the treatment of acute graft-versus-host disease, or aGVHD, lupus/lupus nephritis, and uncontrolled asthma.

Our Investigational New Drug application, or IND, with the U.S. Food and Drug Administration, or FDA, for aGVHD was accepted in July 2018. The FDA granted itolizumab (EQ001) Fast Track designation for the treatment of aGVHD in December 2018 and Orphan Drug designations for both the prevention and treatment of aGVHD in February 2019. In March 2019, we initiated the EQUATE study, a Phase 1b/2 clinical trial of itolizumab (EQ001) for the treatment of aGVHD. In August 2020, the EQUATE study was amended to (a) expand the eligibility criteria to include patients with Grade II aGVHD who have more severe disease as indicated by elevations in Magic Algorithm Probability biomarkers, which predict a greater severity of aGVHD and (b) extend the dosing window of itolizumab (EQ001) from three to seven days after first administration of steroid treatment. In August 2020, we reported positive interim data from the first two cohorts of the Phase 1b part of this trial, and in November 2020, we reported positive interim data through the third dosing cohort. In November 2020, we expanded enrollment in the second and third cohorts in order to collect additional clinical data at those two dosing levels. In February 2021, we submitted a protocol amendment to the FDA to allow for further expansion of enrollment of additional patients until we initiate the next phase of development in aGVHD.

In June 2019, we initiated the EQUIP study, a Phase 1b clinical trial for the treatment of uncontrolled asthma. That study is enrolling patients in Australia and New Zealand.

In July 2019, our IND for lupus/lupus nephritis was accepted by the FDA, and we initiated the EQUALISE study, a Phase 1b proof-of-concept multiple ascending dose clinical trial for the treatment of lupus nephritis in September 2019. The FDA granted itolizumab (EQ001) Fast Track designation for the treatment of lupus nephritis in December 2019. The first part of the EQUALISE study is focused on evaluating the safety of itolizumab in patients with systemic lupus erythematosus, or SLE, followed by a second part in lupus nephritis patients where, in addition to safety, potential clinical activity of itolizumab (EQ001) will be assessed. In September 2020, our EQUALISE study was amended to test doses up to 3.2 mg/kg in lupus nephritis patients, allow for a longer duration of treatment up to 26 weeks, and to change the design to an open-label study.

The following chart summarizes the status of our current clinical development of itolizumab (EQ001).



* Proposed protocol & timeline for site initiation contingent on regulatory review

We have ongoing translational biology programs to assess the therapeutic utility of itolizumab (EQ001) in additional indications where CD6 and its ligand, activated leukocyte cell adhesion molecule (ALCAM), play an important role in the pathogenesis of T cell mediated diseases. Our selection of current and future indications is driven by our analysis of the scientific, translational, clinical and commercial rationale for advancing itolizumab (EQ001) into further development.

We acquired rights to itolizumab (EQ001) for the territories of the United States and Canada in May 2017 pursuant to a collaboration and license agreement with Biocon SA (subsequently assigned to Biocon Limited, or together, Biocon). In December 2019, we expanded our rights to itolizumab (EQ001) to include the territories of Australia and New Zealand pursuant to an amendment to that agreement. In August 2019, we entered into a letter agreement with Biocon that grants us exclusive rights to negotiate licensing rights with third parties to develop and commercialize itolizumab (EQ001) in select major markets outside of North America. This letter agreement allows us to represent itolizumab (EQ001) more broadly commercially and participate in value that may be created with strategic partners across geographies.

Our collaboration with Biocon includes an exclusive supply agreement for clinical and commercial drug product of itolizumab (EQ001). Biocon currently manufactures itolizumab (EQ001) at commercial scale in a facility in India regulated by the FDA.

Strategy

Our goal is to become a leading, fully-integrated biotechnology company focused on therapies for severe immuno-inflammatory disorders. To achieve our goal, we intend to:

- **Develop itolizumab (EQ001) for the treatment of GVHD.** Based on our deep and proprietary understanding of the CD6-ALCAM pathway, our translational research, and prior clinical studies targeting CD6+ T_{eff} cells in graft-versus-host disease, or GVHD, we are developing itolizumab (EQ001) as a first-line treatment of aGVHD. Itolizumab (EQ001) blocks the CD6-ALCAM pathway thereby inhibiting T_{eff} cell activity and trafficking into tissues. We are currently conducting the EQUATE study, a Phase 1b/2 clinical trial of itolizumab (EQ001), as a first-line therapy concomitant with steroids for the treatment of aGVHD. In this trial we are assessing safety, pharmacokinetics, or PK, pharmacodynamics, or PD, and a number of clinical outcomes including overall response rate, survival, steroid

taper and incidence of chronic GVHD, or cGVHD. In November 2020, we reported interim results from the ongoing Phase 1b portion of the clinical trial, whereby the overall response rate across the first three dose cohorts was 80%, and seven of eight patients responding achieved a complete response, or CR, and one patient achieved a very good partial response, or VGPR, by Day 29 (VGPR approximates the clinical benefit of CR). Responses observed have been rapid and durable, with a majority of patients achieving a CR within the first 15 days and maintaining responses through Day 85. To date, adverse events reported with the clinical trial have been consistent with the safety profile previously reported for itolizumab and those observed in the aGVHD patient population. In review of the totality of safety, efficacy and pharmacodynamic data, the independent data monitoring committee recommended expanding cohorts 2 and 3 (0.8 and 1.6 mg/kg dose, respectively) and proceeding with enrollment. We plan on reporting topline data from the Phase 1b portion of the EQUATE study during the first half of 2021 and working with the FDA to advance clinical development of itolizumab (EQ001) in aGVHD.

- **Develop itolizumab (EQ001) for the treatment of lupus and lupus nephritis.** Itolizumab **(**EQ001) has been shown to block the CD6-ALCAM pathway thereby inhibiting T_{eff} cell activity and trafficking into tissues. Translational data in preclinical models of lupus and glomerulonephritis, plus data from human kidney and urine samples, supports the potential therapeutic relevance of targeting the CD6-ALCAM pathway in lupus nephritis. We believe that itolizumab (EQ001) represents a promising therapeutic approach that is highly differentiated relative to B cell, single cytokine and other co-stimulatory therapies that have largely failed in attempts to develop treatments for lupus and lupus nephritis. We are currently conducting the EQUALISE study, a Phase 1b proof-of-concept clinical trial of itolizumab (EQ001) in patients with SLE and in patients with lupus nephritis. In March 2020, as a result of impacts and risks associated with the global pandemic caused by COVID-19, we decided to pause enrollment of the EQUALISE study and in July 2020, we announced that patient enrollment in this trial had resumed. We plan on reporting topline data from the Type A SLE cohorts in the first quarter of 2021 and interim data from the Type B lupus nephritis portion of the study in the second half of 2021. As part of the early development program in lupus nephritis, we may also include the co-development and validation of a diagnostic biomarker related to the CD6-ALCAM pathway and other urinary biomarkers to further evaluate and support a potential companion diagnostic strategy.

- **Develop itolizumab (EQ001) for the treatment of uncontrolled asthma.** Asthma is a heterogeneous and dynamic immuno-inflammatory disease for which T_{eff} cells such as T_h2 and T_h17 play a central role in immunopathogenesis. Targeting the CD6-ALCAM pathway with itolizumab (EQ001) has been shown to inhibit the activity and trafficking of both T_h2 and T_h17 T_{eff} cells. Therefore, we believe itolizumab (EQ001) is uniquely positioned to broadly address both T_h2-mediated eosinophilic and non-T_h2-mediated non-eosinophilic asthma. Current biological therapies that are approved and most of the new agents in development for asthma have focused on patients with eosinophilic T_h2-driven asthma and don't address a large portion of the population with non-eosinophilic or non-T_h2 asthma. Our development strategy will be to address these gaps in care by assessing activity of itolizumab (EQ001) in uncontrolled asthma patients with both eosinophilic and non-eosinophilic asthma. We are currently conducting the EQUIP study, a Phase 1b clinical trial of itolizumab (EQ001) in patients with uncontrolled asthma. In March 2020, as a result of impacts and risks associated with the global pandemic caused by COVID-19, we decided to pause enrollment of the EQUIP study and in July 2020, we announced that patient enrollment in this trial had resumed. Despite our best efforts, enrollment during the pandemic continues to be challenging due to patients' high-risk status for COVID-19 and a decrease in asthma exacerbations as a result of stay-at-home and social distancing measures. We have amended the current protocol to assess primarily safety measures and we expect to report topline data from the EQUIP study in the second half of 2021.

- **Expand clinical development of itolizumab (EQ001) into additional indications based on our translational biology program.** We will continue to conduct preclinical and translational studies and assimilate learnings from itolizumab (EQ001) in clinical trials to help inform the selection of additional indications for future development.

- **Opportunistically expand our pipeline of product candidates.** We will leverage the collective talent within our organization to opportunistically acquire or in-license other high-value therapeutic programs that may complement our core strategy or have the potential for synergistic therapeutic benefit in combination with itolizumab (EQ001).

- **Build a commercial infrastructure.** If approved, we intend to commercialize itolizumab (EQ001) ourselves in indications that can be efficiently targeted using a specialty sales force, such as aGVHD and lupus nephritis. For other indications, such as uncontrolled asthma, we intend to commercialize itolizumab (EQ001) either independently or through collaborations with other parties.

Understanding the Basis of Our Approach: The Role of CD6 in Autoimmunity

The role of the immune system is to defend the body against foreign organisms and cells, including cancerous cells, and in doing so must distinguish accurately between self- and non-self entities, a process called tolerance. Autoimmunity is an immune response directed against the body's own healthy cells and tissues, and is the underlying process in many inflammatory diseases. Autoimmunity results from a loss of tolerance caused in part by an imbalance in the relationship between T_{eff} and regulatory T cells, or T_{reg} cells, see **Figure 1**.

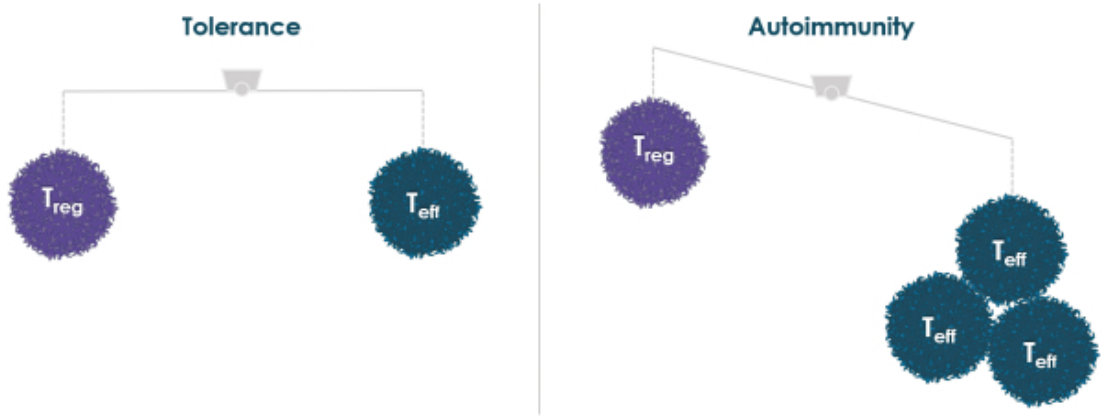


Figure 1: Autoimmunity is a balancing act. Treg cells play an important role in preventing Teff cells targeting of self-antigens that can lead to autoimmunity and tissue destruction.

Immune checkpoints are critical regulators of immune activation pathways and can be either co-stimulatory (activating) or co-inhibitory (inhibiting). These pathways are crucial for maintaining immune balance and preventing autoimmunity. Immune checkpoints have been targeted for the treatment of cancers, where blockade of co-inhibitory signals results in an increased immune response against tumor cells, and such approaches have resulted in the approval of several novel therapeutics. We believe co-stimulatory checkpoints are attractive drug targets for the treatment of immuno-inflammatory diseases and more recently they have become a focus of development in immuno-inflammation. However, identifying checkpoints that allow for the selective modulation of T_{eff} cell activity while preserving T_{reg} cell activity in order to promote tolerance has proven challenging.

CD6 is a novel, tightly-regulated, co-stimulatory receptor that plays an integral role in modulating T cell activation, proliferation, differentiation and trafficking. CD6 serves as a key checkpoint in regulating T_{eff} cells that are central to autoimmune responses. Preclinical and clinical studies have shown that blockade of CD6 co-stimulation leads to selective inhibition of pathogenic T_{eff} cell activity and trafficking, while preserving the important regulatory function of T_{reg} cells. Such studies and new insights into the underlying biology highlight CD6 as a resurgent target for the treatment of multiple immuno-inflammatory diseases.

CD6 is predominantly expressed on T helper cells, or T_h cells, and regulates T cell responses. Once activated, naïve T_h cells become T_{eff} cells and carry out specialized immune functions depending on their specific phenotype such as T_h1, T_h2 and T_h17 cells. The expression levels of CD6 are increased on T_{eff} cells and are associated with autoreactivity in cells, leading to autoimmunity. Conversely, the lower or no expression of CD6 on T_{reg} cells suggests that CD6 is not required for their regulatory function. See **Figure 2.**

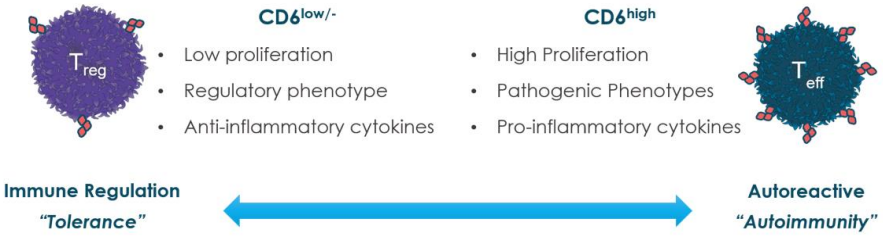


Figure 2: CD6 expression is associated with T cell function. $CD6^{high}$ T cells have increased pathogenic potential with increased proliferative capacity, secretion of proinflammatory cytokines and are associated with allo- and autoreactivity, i.e., autoimmunity. $CD6^{low/-}$ T cells have decreased pathogenic potential with decreased proliferative capacity, increased secretion of anti-inflammatory cytokines and are associated with immune regulation, i.e., tolerance.

Activated leukocyte cell adhesion molecule, or ALCAM, is a ligand of CD6 that is expressed on hematopoietic tissues such as antigen-presenting cells, where it is important for immune synapse formation and optimal co-stimulation. Binding of ALCAM to domain-3 of CD6 leads to the downstream activation of several mitogen activated protein kinase pathways related to T cell activation, proliferation, differentiation and survival. See **Figure 3**.

Studies have shown that co-stimulation of CD6 by ALCAM enhances T cell activation and resulted in a five-fold increase in IL-2 receptor mediated T_{eff} cell proliferation. Moreover, CD6 co-stimulation promotes a preferentially pro-inflammatory response and increased secretion of T_{eff} cytokines IFN-γ, TNF-α and IL-6. Additionally, CD6 co-stimulation leads to increased expression and activation of validated targets for the treatment of immuno-inflammatory disease, including signal transducer and activator of transcription 3, or STAT3, and retinoid acid-related orphan receptor, or RORγt, the master transcriptional regulator of T_h17 cells. This results in increased expression of IL-23R and high levels of IL-17, both markers of pathogenic T_h17 cell activity and resistance to steroid treatment, which is a first-line therapy in many immuno-inflammatory diseases. T_h17 cells play an especially important role in autoimmunity: T_h17 and T_{reg} cells are reciprocally regulated and thus an increase in T_h17 cells and associated cytokines leads to suppression of T_{reg} cell activity and loss of tolerance. Studies have shown that co-stimulation through CD6 is superior to CD28 co-stimulation in driving T_h17 cell development and thus represents an attractive target for the treatment of immuno-inflammatory diseases, especially those resistant or refractory to steroid treatment.

ALCAM is also expressed on non-hematopoietic tissues such as the vascular endothelium, blood-brain barrier, skin, lung, kidney and gut, where it selectively facilitates the trafficking of T cells expressing CD6. Studies have shown that, in the presence of the pro-inflammatory cytokine IFN-γ, the expression of ALCAM is increased on a number of cell types, suggesting an important dual role for the CD6-ALCAM pathway in autoimmune and inflammatory responses.

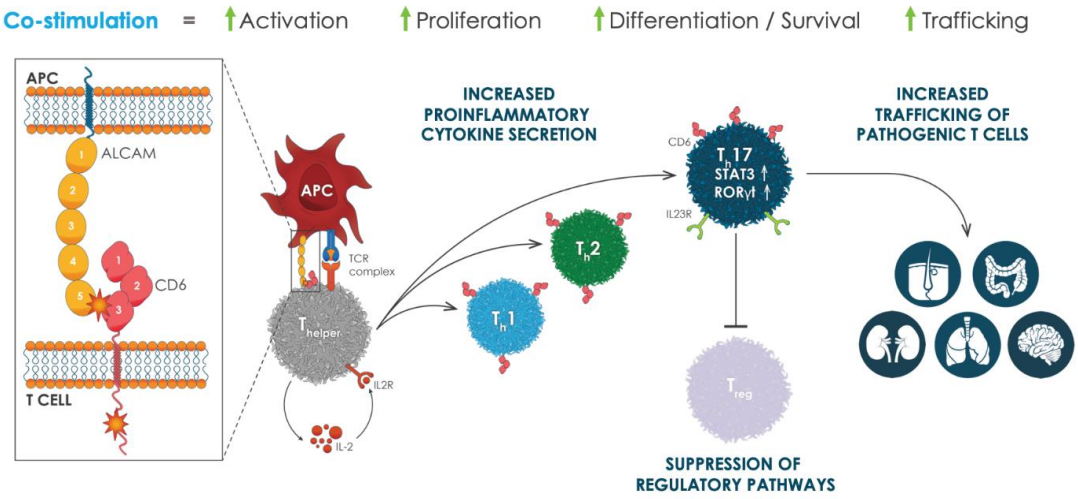


Figure 3: CD6 co-stimulation drives pathogenic T cell development and activity. Co-stimulation occurs through the binding of ALCAM to domain-3 of CD6, leading to synergistic activation resulting in a five-fold increase in IL-2 receptor mediated Teff cell proliferation. Co-stimulation through CD6 promotes a pro-inflammatory response including the activation of pSTAT3 and RORγt resulting in increased expression of IL-23R and pathogenic secretion of several Teff pro-inflammatory cytokines. ALCAM expressed on tissues such as the skin, lung, gut, blood-brain-barrier and kidney, selectively facilitates the trafficking of Teff cells expressing CD6. Notably, Th17 cells (that are steroid insensitive) and associated cytokines suppress Treg cell activity leading to a high Th17:Treg ratio characteristic of chronic autoimmunity.

Modulation of T_{eff} Cell Activity with Itolizumab (EQ001)

Itolizumab (EQ001) is a humanized antibody that selectively binds to human CD6 and inhibits the interaction of CD6 with its ligand ALCAM, preventing co-stimulation, and thereby reducing T_{eff} cell activity and trafficking. Preclinical studies of itolizumab (EQ001) have shown that blockade of CD6 leads to a reduction in T_{eff} cell proliferation and downregulation of several important pathways that contribute to T_{eff} cell development such as T_h1, T_h2 and T_h17 cells. Critically, CD6 blockade leads to the downregulation of important cellular pathways that control inflammation, including STAT3 and RORγt. The

downregulation of these pathways is accompanied by decreased secretion of the pro-inflammatory T_{eff} cytokines IFN-γ, TNF-α, IL-6 and IL-17.

Additionally, inhibiting the binding of ALCAM to CD6, either by anti-CD6 monoclonal antibodies or by deletion of the gene expressing CD6, modulates lymphocyte trafficking and results in reduced T_{eff} cell infiltration into inflamed tissues. Based on its broad multi-modal mechanism, we believe itolizumab (EQ001) has the potential to treat multiple immuno-inflammatory diseases, including those that are resistant or refractory to existing therapies. See **Figure 4**.

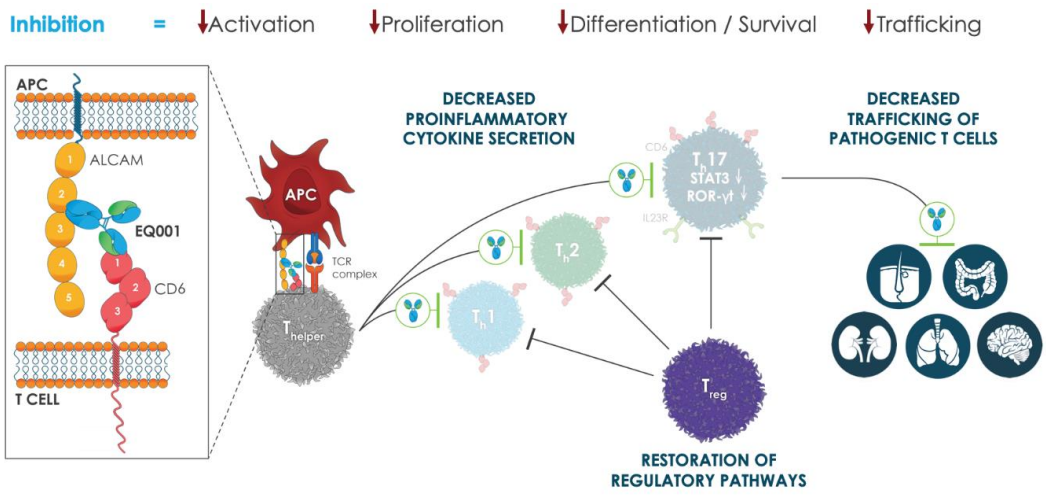


Figure 4: Blockade of CD6 by itolizumab (EQ001) inhibits Teff cell activation, proliferation, differentiation and trafficking. Itolizumab (EQ001) selectively binds to domain-1 of CD6 and inhibits the interaction of ALCAM, preventing co-stimulation and thereby reducing Teff cell proliferation. Blockade of CD6 downregulates pSTAT and RORγt resulting in reduced expression of IL-23R and secretion of pro-inflammatory Teff cytokines IFN-γ, TNF-α, IL-6 and IL-17. Additionally, inhibiting the binding of ALCAM to CD6, reduces lymphocyte trafficking into inflamed tissues such as the skin, lung, gut, blood-brain-barrier and kidney. Reduction in the number and activity of Th17 cells inhibiting the Treg cells restores immune balance and promotes immune tolerance.

Experimental Evidence for Targeting CD6 in Immuno-Inflammation

We are leveraging our deep understanding of immunobiology and translational biology program to assess the importance of the CD6-ALCAM pathway in disease pathogenesis and therapeutic utility of CD6 blockade using well-characterized model systems and human tissues. As a leader in the field of CD6 immunobiology, our objective is to inform selection of indications in specific disease areas that are likely to respond to the targeting of the CD6-ALCAM pathway by itolizumab (EQ001).

The role of CD6 in pathogenic T_{eff} cell development has been independently validated *in vivo* both genetically and pharmacologically in a number of published experimental models of T_h1, T_h2 and T_h17 immuno-inflammation.

In addition to such published, independent studies, we have demonstrated the activity of itolizumab (EQ001) (or anti-CD6D1, its mouse surrogate anti-CD6 antibody) in a number of disease models. Described below are findings from studies in models of several key immuno-inflammatory disease areas, including GVHD, inflammatory bowel disease, SLE, and glomerulonephritis, which illustrate blockade of CD6 inhibiting pathogenic T cell activity. We believe the results of these published studies and our internal translational program support our approach in targeting the CD6-ALCAM pathway in the treatment of immuno-inflammation.

Pre-Clinical Data Indicates Treatment with Itolizumab (EQ001) Attenuates Immune Responses Associated with GVHD

GVHD is a multisystem disease commonly associated with hematopoietic stem cell transplants in which transplanted donor lymphocytes attack host tissues. GVHD is predominantly driven by T cells that express high levels of CD6. Prior clinical studies have implicated cells expressing CD6 in the development of GVHD, suggesting that CD6 is a highly relevant target to this disease.

We tested itolizumab (EQ001) in a humanized xenograft mouse model of GVHD generated by injection of human peripheral blood mononuclear cells into an NSG mouse, which is an immunodeficient mouse. In this well-characterized, gold standard model, disease is aggressively driven by a human T cell response against host tissue. The severity of disease is assessed by

survival, weight loss, prevalence of human cells in peripheral blood and trafficking of human cells into tissues. Itolizumab (EQ001) can be assessed in this model because human T cells are present. In the model, we tested a high dose of itolizumab (EQ001) (300µg), a low dose of itolizumab (EQ001) (60µg), and as comparator controls, two CTLA4-Ig based modulators of CD28 co-stimulation, Nulojix (belatacept) and Orencia (abatacept), which are both FDA-approved drugs that also target activated T_{eff} cells.

Treatment with both high and low dose itolizumab (EQ001) resulted in no deaths by Day 35 compared to the 90% mortality seen in vehicle treated control animals. This is a direct result of inhibition of human T cell proliferation and infiltration into tissues. Animals treated with itolizumab (EQ001) demonstrated a profound reduction in human T cells at Days 10 and 35 with a prevalence of 0.2% (both days), whereas vehicle treated animals exhibited a prevalence of 17.5% human T cells by Day 10. The ability of itolizumab (EQ001) to prevent T cell establishment compared highly favorably to both Nulojix and Orencia.

Itolizumab (EQ001) was similarly able to control ongoing GVHD disease that was initiated before the start of treatment with itolizumab (EQ001). Treatment with itolizumab (EQ001) starting 5 days after disease initiation resulted in an ~50% reduction in mortality and significant decrease in weight loss compared to vehicle control animals. These results were matched by decreases in peripheral T cell prevalence compared to vehicle control animals demonstrating the potential for the use of itolizumab (EQ001) as a prophylactic and therapeutic approach to managing GVHD.

Treatment with Anti-CD6 Antibody Inhibits Immune Responses Associated with Inflammatory Bowel Disease

Inflammatory bowel disease, or IBD, such as Crohn's disease and ulcerative colitis, is characterized by chronic inflammation resulting from persistent activation and infiltration of immune cells in the gut. Activated T_{eff} cells, such as T_h1 and T_h17, which express CD6, are associated with IBD and its severity. Data from human genetic studies have demonstrated an association between CD6 and the development and severity of IBD. Translational data demonstrates that ALCAM expression is increased in intestinal mucosa of IBD patients and correlates with an increased infiltration of CD6+ T_h1/T_h17 T cells and disease severity. Additionally, increased IFN-γ and IL-17A expression in IBD patients is associated with CD6+ T_{eff} cells. Inhibition of T_{eff} cells, such as T_h1 and T_h17 cells, have been shown to reduce IBD disease severity and progression, confirming the relevance of the CD6-ALCAM pathway in this disease.

The 2,4,6-trinitrobenzenesulfonic acid, or TNBS, model is a standard model of IBD that is driven by T_h1 and T_h17 cell responses. Exposure to TNBS leads to inflammation, diarrhea, tissue destruction and shortening of the colon. In this model, we tested blockade of CD6 using anti-CD6D1, which binds to the same CD6 domain-1 in mice that itolizumab (EQ001) binds on human CD6. As comparator controls, separate groups of mice were treated with either anti-IL-12p40 (a therapeutic mechanism of action similar to Stelara, an FDA-approved therapy for Crohn's disease), dexamethasone or vehicle. Blockade of CD6 inhibits the TNBS-induced immune response as exhibited by decreases in serum and tissue pro-inflammatory cytokines. This is accompanied by statistically significant decreases in inflammation-mediated colon shrinkage, histological measures of necrosis, edema and mucosal inflammation, and diarrhea/loose stool. The results of anti-CD6D1 treatment were comparable to high dose anti-IL-12p40 treatment, another inhibitor of the T_h1 and T_h17 cell pathways. Results of this model are relevant not only to IBD but also other immuno-inflammatory gut conditions, including GVHD.

Treatment with Anti-CD6 Antibody Inhibits Renal Inflammation

Recent evidence has demonstrated that T_{eff} cells specifically play a crucial role in the pathogenesis of both SLE and lupus nephritis by mediating tissue damage and the production of autoantibodies via promotion of B cell maturation and activity. Multiple T_{eff} cells, T_h1, T_h2, T_h17 as well as CD8 T cells, have all been implicated in the immune pathogenesis of both SLE and lupus nephritis. However, T_h17 cells are emerging as key targets. High levels of IL-17 predict poor histopathological outcome after immunosuppressive therapy in patients with lupus nephritis. Elevated levels of T_h17 cells are accompanied by a decrease in T_{reg} cells, suggesting that loss of this functional immune balance may be involved in the pathogenesis of renal damage in SLE patients.

To test the effect of CD6 blockade in an extensively tested model of SLE and lupus nephritis, we utilized the MRL/MpJ-Faslpr/2J mouse strain. This strain develops spontaneous systemic autoimmunity with many similarities to human SLE and lupus nephritis disease and is routinely used in SLE/lupus nephritis research. Analogous to SLE patients, mice develop systemic autoimmunity, hyperactive T and B cells, autoantibodies against nuclear antigens, glomerulonephritis, and additional SLE manifestations including arthritis, cerebritis, skin rash, and vasculitis. In this model, we tested anti-CD6D1 antibody, isotype control, vehicle or cyclophosphamide (similar mechanism as Cytoxan).

Blockade of CD6 using anti-mCD6D1 reduced mortality due to systemic autoimmunity. Both proteinuria and the ratio of urine albumin and creatinine at termination (more accurate measure of kidney function) were significantly reduced, indicating better kidney function compared to controls. This was matched by decreased numbers of infiltrating T cells in the kidney, including effector/memory and activated CD4 and CD8 T cells, which are thought to play a pathogenic role in this model as well as human

lupus nephritis disease. Tissue damage as measured by renal pathology and skin lesions were significantly decreased similarly to cyclophosphamide, which is one of the few effective, albeit relatively toxic, treatments for lupus nephritis.

To further examine the role of CD6 blockade specifically on renal inflammation associated lupus nephritis, we utilized a well-characterized model of acute glomerulonephritis that is commonly used to study lupus nephritis. The nephrotoxic serum nephritis, or NTN, model exhibits glomerulonephritis that is mechanistically and histologically similar to that observed with lupus nephritis and, consequently, the NTN model is commonly used to test pharmacologic agents for this specific complication of SLE. Similar to the MRL/MpJ-Faslpr/2J model of SLE (described above), we tested anti-CD6D1 antibody, isotype control, vehicle or cyclophosphamide (similar mechanism as Cytoxan).

Anti-mCD6D1 treated mice maintained significantly lower proteinuria compared to isotype and vehicle control mice. At termination, the albumin creatinine ratios were significantly lower in anti-mCD6D1 treated mice. Furthermore, blood urea nitrogen, a second measure of kidney function in serum, was decreased, suggesting that CD6 blockade protected kidney function in this model. The improvement in kidney function was associated with a decrease in immune cell infiltration, with fewer infiltrating total lymphocytes (CD45+), CD11b+ myeloid cells, inflammatory macrophages, neutrophils, and T cells in the kidney. T cells play an important role in the pathogenesis of nephritis and kidney damage. Importantly, the prevalence of activated CD4 T cells (CD25+ CD69+) was also diminished. The reduction in infiltrating immune cells was accompanied by a decrease in inflammatory cytokines in the kidney. Decreases in both inflammatory cytokines and infiltrating immune cells resulted in improvements in renal pathology.

Itolizumab: Clinically Validated in the Treatment of Immuno-Inflammatory Diseases

Itolizumab has shown activity in clinical trials in patients with rheumatoid arthritis, psoriasis and COVID-19. Biocon has completed four clinical studies of itolizumab in India for the treatment of rheumatoid arthritis, chronic plaque psoriasis, and cytokine release syndrome, or CRS, in COVID-19 patients with moderate to severe acute respiratory distress syndrome, or ARDS, evaluating dose levels ranging from 0.2 mg/kg to 1.6 mg/kg. An overview of these clinical studies is presented in **Table 1**.

Table 1: Overview of the Biocon clinical development program of itolizumab

PHASE	STUDY NUMBER	NUMBER OF PATIENTS	DOSE LEVELS (MG/KG)	DURATION (WEEKS)	INDICATION
2	CLG007/BIO004/ RA/CD6/2006	70	0.2, 0.4, and 0.8	12	Rheumatoid arthritis
2	T1hAb-CT1-001-07	40	0.4, 0.8, and 1.6	8	Chronic plaque psoriasis
3	T1hAb-CT3-002-09 (TREAT-PLAQ)	223	0.4 and 1.6	52	Chronic plaque psoriasis
2	ITOLI-C19-02-I-00	30	0.8 and 1.6	6	CRS in COVID-19 patients with moderate to severe ARDS

The Phase 3 TREAT-PLAQ trial was a randomized, double-blind, placebo controlled, multi-arm, multi-dose, one-way crossover design studying 223 psoriasis patients. Results from this trial demonstrated that itolizumab had a favorable safety and tolerability profile and durable efficacy as measured by psoriasis area and severity index, or PASI. The primary end point was the proportion of patients with at least 75% improvement in PASI score, or PASI 75, at Week 12.

In Arm A patients received itolizumab at 0.4 mg/kg weekly for the first four weeks, then 1.6 mg/kg every two weeks until Week 12; in Arm B patients received at 1.6 mg/kg every two weeks until Week 12. At Week 12 only 2.3% of patients receiving placebo achieved PASI 75 compared to 27.0% and 36.4% of patients achieving PASI 75 by Week 12 in Arms A (p value = 0.0172) and B (p value = 0.0043), respectively. At Week 12, patients in the placebo arm crossed over to treatment with itolizumab. Following Week 28, patients that responded to itolizumab (those that reached PASI 75) were re-randomized to one of two groups, either cessation of drug (n =40) or maintenance therapy (n = 39, with 1.6 mg/kg of drug given every 3 months). Prior itolizumab treatment produced a durable effect in patients that were no longer given drug, with 53% of patients maintaining PASI 75 and 75% at PASI 50. 67% of patients that continued itolizumab treatment had maintained PASI 75 scores, while 85% maintained PASI 50. Histologically, skin biopsy data show that treatment with itolizumab statistically significantly reduces the trafficking of T cells into the dermis and this is consistent with observed reduced severity of disease and therapeutic mechanism. See **Figure 5**.

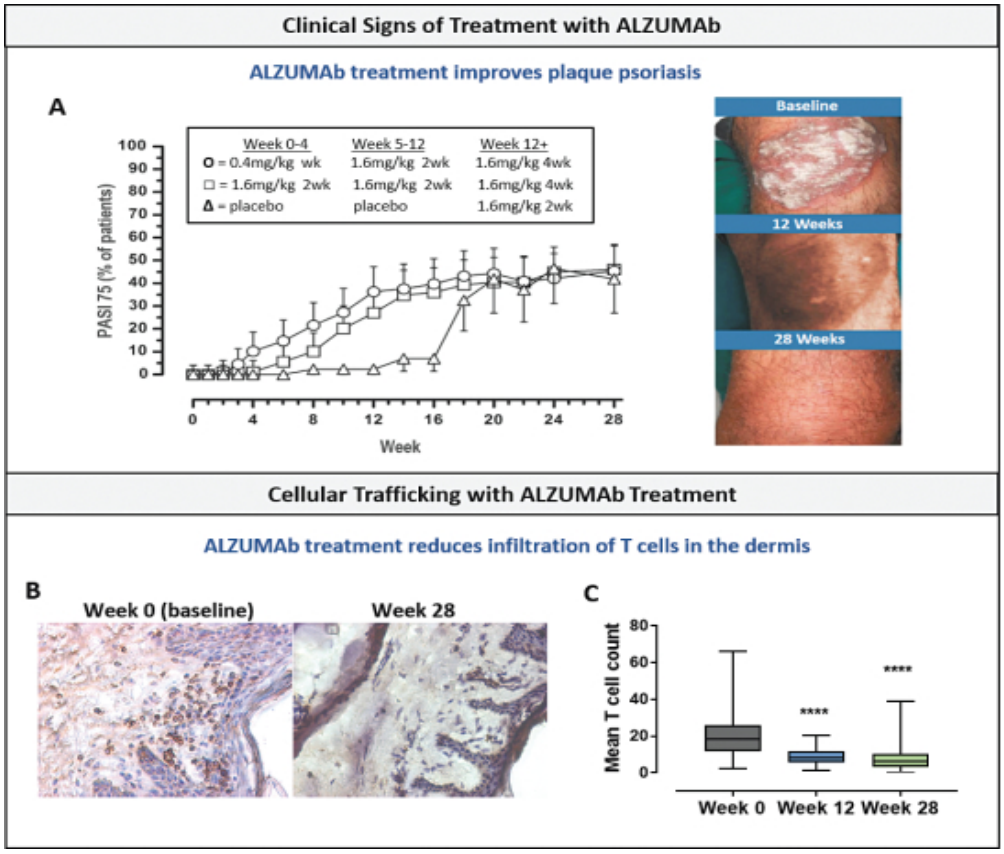


Figure 5: Itolizumab, brand name ALZUMAb, an approved treatment for psoriasis in India. (A) The proportion of patients who achieved a PASI 75 response at each visit until Week 28. (B) Treatment with ALZUMAb statistically significantly reduces the trafficking of T cells into the dermis. Compared to Visit 1, at Visit 16 there were statistically significantly fewer T cells in the dermis, as shown by CD3 labeling, a pan T cell marker. (C) Histogram shows the mean T cell count in the dermis was statistically significantly reduced in Week 12 and Week 28, compared to Week 0, which was consistent with the observed reduced severity of disease. ****p<0.0001.

Psoriasis is a chronic immuno-inflammatory disease characterized by inflammation and aberrant hyperproliferation of keratinocytes. The pathogenesis of psoriasis is complex and numerous components of the immune system play a role, including T_h17 cells and associated cytokines, most notably IL-17. The underlying pathophysiology of different immuno-inflammatory diseases can vary substantially, and therefore drugs that operate by different mechanisms can demonstrate diverging levels of efficacy in each condition. For example, the PASI 75 scores achieved at three months by subjects treated with itolizumab (36%) in its pivotal trial in psoriasis were in line with Enbrel (46-47%), an effective psoriasis drug, but they were less than the newly approved anti-IL-17 agents such as Cosentyx (66-82%). We believe the explanation for this result is that while T_h17 cells play a role in psoriasis, there are also non-T cell mediators that contribute to disease pathogenesis, suggesting that psoriasis may not be an ideal indication for this therapeutic approach. Based on published clinical trial data from multiple studies that were not conducted on a head-to-head basis, it appears that itolizumab has demonstrated superior PASI 75 scores in psoriasis compared to modulation of CD28 co-stimulation using Orencia (16.4%), which is approved for the treatment of psoriatic and rheumatoid arthritis. Also, a recent meta-analysis comparing efficacy across trials indicated that Orencia demonstrated superior efficacy in ACR 50 scores, a common clinical test for determining improvement in a person's rheumatoid arthritis, than Cosentyx in certain populations of psoriatic arthritis patients. These observations illustrate the importance of matching disease pathology and therapeutic mechanism in order to optimize therapeutic benefit.

Itolizumab was well tolerated by the patients in the Phase 3 TREAT-PLAQ trial, with infusion reactions and related events, which are expected for an antibody infusion, as the main adverse events, or AEs, attributed to itolizumab. The incidence of infusion reactions dropped sharply after the first few infusions. Itolizumab did not appear to increase the rate of infections compared to placebo, and the incidence of severe adverse events, or SAEs, was low (a total of five SAEs were reported). SAEs included exfoliative dermatitis (widespread redness and peeling of the skin), erythrodermic (severe) psoriasis, infusion-related

reaction, adjustment disorder with anxiety, and bacterial arthritis. No SAEs led to discontinuation or reduction of drug dosage. See **Table 2** for a summary of AEs seen during the Phase 3 trial.

Table 2. Adverse events that occurred in >5% of subjects in either itolizumab treatment arm, placebo arm, or overall in the trial.

Weeks 1-12	**Itolizumab** (n = 180) n (%)	**Placebo** (n = 43) n (%)
Any Adverse Event	72 (40.0%)	20 (46.5%)
Infusion Reaction (acute)	33 (18.3%)	1 (2.3%)
Infection	6 (3.3%)	4 (9.3%)
Pruritus (itching)	5 (2.8%)	3 (7.0%)

Weeks 13-52	**Itolizumab** (n = 223) n (%)
Any Adverse Event	111 (49.8%)
Infusion Reaction (acute)	38 (17.0%)
Pyrexia (fever)	19 (8.5%)
Infection	17 (7.6%)
Pruritus	12 (5.4%)

An examination of lymphocyte counts in the study noted a mild decrease in the mean absolute lymphocyte count, or ALC, in the two itolizumab treatment arms at the initiation of treatment during the placebo controlled portion of the study (weeks 1-12). The decrease that was observed tended to occur after the first dose. See **Figure 6**. These observed changes were not associated with an increase in secondary infection.

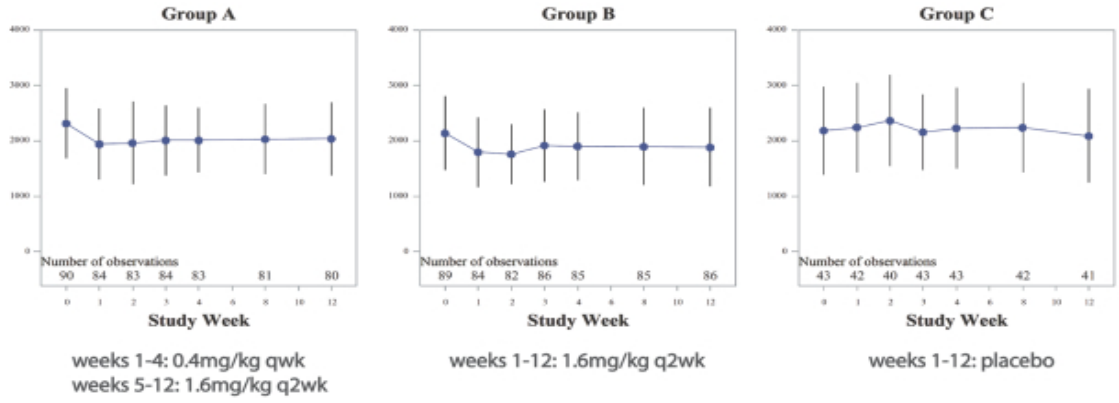


Figure 6: Lymphocyte counts in the peripheral blood of psoriasis patients during treatment with itolizumab. Graphs depict mean ALC (+/- standard deviation) of each treatment group during the first 12 weeks following initiation of treatment. The treatment regimen of each group is specified beneath the respective graph. Groups A and B, which received itolizumab, exhibited a modest decrease in ALC after the first dose but not subsequent doses.

On the basis of the Phase 3 TREAT-PLAQ trial, itolizumab was approved in India in 2012 for the treatment of moderate to severe plaque psoriasis and is marketed by Biocon under the brand name ALZUMAb. More recently in July 2020, based on the results of a Phase 2 study conducted by Biocon, the Drugs Controller General of India, or DCGI, granted restricted emergency use approval of itolizumab in India for the treatment of CRS in COVID-19 patients with moderate to severe ARDS.

In addition to the aforementioned clinical trials conducted by Biocon in India, itolizumab has also been studied in clinical trials in Cuba in patients with rheumatoid arthritis, psoriasis, Type 1 diabetes, and COVID-19. Centro de Immunologia Molecular has been granted regulatory approval in Cuba for itolizumab to be used in patients with rheumatoid arthritis and psoriasis as well as

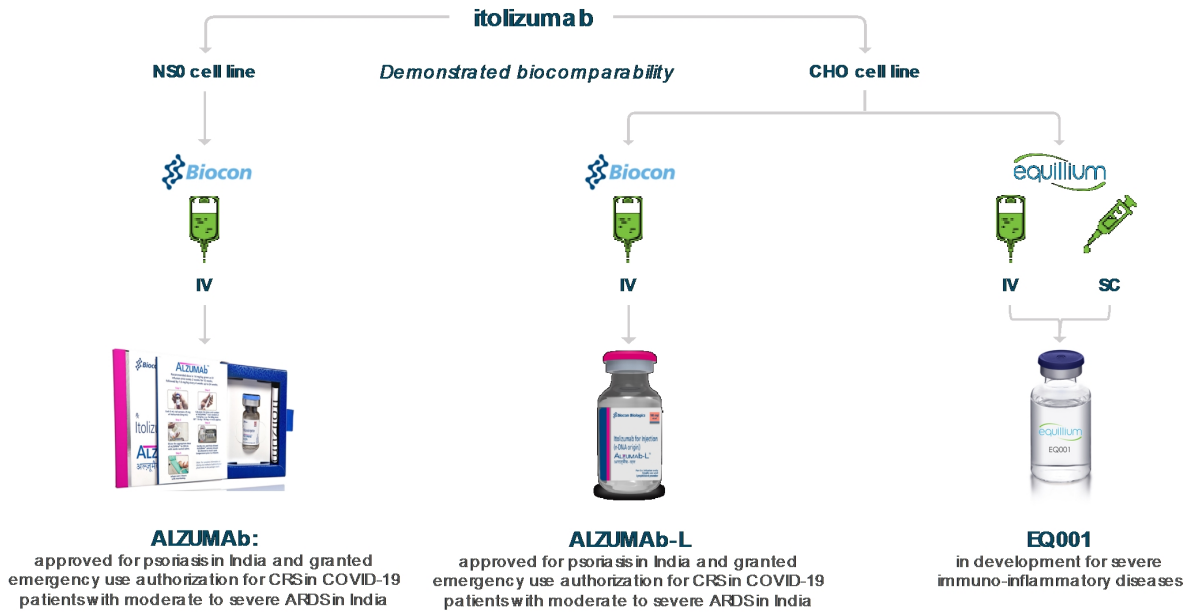
emergency use approval in patients with COVID-19. India and Cuba are the only jurisdictions where itolizumab is currently approved or marketed.

Post-market safety surveillance of ALZUMAb has collected non-serious reports, primarily involving the dermatologic system organ class that have included rash, acne, urticaria, increased pruritus (itching) and increased psoriasis. Serious reports have included infusion reaction, type 1 hypersensitivity, diarrhea and urticaria (hives). Through the date of this filing, there has been no change in the assessed benefit-risk profile of itolizumab.

Itolizumab (EQ001) Product Development

ALZUMAb is produced in an NS0 cell line and is currently available only in an intravenous, or IV, formulation. Itolizumab (EQ001) contains the identical monoclonal antibody sequence produced in a Chinese hamster ovary, or CHO, cell line and may be administered by IV or via subcutaneous injection, or SC. CHO cell lines are the industry-standard antibody therapeutic production system. In September 2020, the DCGI granted approval of itolizumab produced in a CHO cell line, marketed in India under the brand name ALZUMAb-L, or ALZUMAb Lyophilized, for the treatment of plaque psoriasis, as well as emergency use authorization of ALZUMAb-L for the treatment of CRS in COVID-19 patients with moderate to severe ARDS. Moving forward, Biocon is planning on transitioning their marketing and commercialization efforts from ALZUMAb to ALZUMAb-L. Itolizumab (EQ001) and ALZUMAb-L are different drug product names for the same formulation.

Itolizumab (EQ001) is manufactured by Biocon at commercial scale in an FDA regulated manufacturing facility in India. Biocon has generated data demonstrating the analytical biocomparability of itolizumab (EQ001)/ALZUMAb-L and ALZUMAb using industry-standard physicochemical and biofunctional characterization methods.



Itolizumab (EQ001) Phase 1 Clinical Trial in Healthy Subjects

Biocon conducted a Phase 1 clinical trial of itolizumab (EQ001) in 37 healthy subjects that was completed in Australia in the fourth quarter of 2017. The study was conducted in two stages, with the first stage designed to assess the safety, tolerability, PK, PD, and immunogenicity of ascending single doses of itolizumab (EQ001) SC, and the second stage designed to compare the PK of itolizumab (EQ001) IV to ALZUMAb and determine the absolute bioavailability of itolizumab (EQ001) SC.

Stage 1 was a randomized, double-blind, placebo controlled, ascending single dose evaluation of itolizumab (EQ001) SC. Thirty-two subjects completed Stage 1: 24 subjects (six per cohort) were administered itolizumab (EQ001) SC in single doses of 0.8 mg/kg, 1.6mg/kg, 2.4 mg/kg, or 3.2 mg/kg, and eight subjects were administered placebo. Serum concentrations of itolizumab (EQ001) were measurable at Day 57, and the mean half-life ranged from 532 hours to 616 hours across dose cohorts. The PK for exposure following itolizumab (EQ001) SC administration were dose proportional, with the peak serum

concentration generally achieved within 168 hours after dosing for most subjects. Saturation of CD6 receptors by itolizumab (EQ001) was seen at all dose levels. During Stage 1, a transient decrease in T cells expressing CD4, and to a lesser extent CD8, here observed, as well as a two- to three-times increase in the proportion of T_{reg} cells.

The administration of single doses of itolizumab (EQ001) SC in Stage 1 was found to be well tolerated, with a low incidence (2/24) of low titer anti-drug antibodies. There were no SAEs, dose limiting toxicities, or DLTs, or study drug discontinuations reported. No clinically meaningful changes in physical examinations or vital signs was observed, whereas transient decreases in lymphocyte counts without clinical consequences were seen in 11/24 (46%) subjects. There were five subjects who experienced grade 3 treatment emergent adverse events, or TEAEs, of lymphocyte count decreases (two subjects each in the 1.6 mg/kg and 3.2 mg/kg dose cohorts and one subject in the 2.4 mg/kg dose cohort). Mild to moderate injection site reactions were observed in 15/24 (63%) of the patients. The other most common TEAEs with itolizumab (EQ001) SC were headache in 7/24 (29%), urticaria (hives) in 4/24 (17%), and pyrexia (fever) in 3/24 (13%) of the subjects. In general, observed AEs were transient, mild to moderate in severity, were not dose dependent, and most were consistent with those observed in prior clinical experience with ALZUMAb.

Stage 2 was a comparability study of the PK of itolizumab (EQ001) IV, and ALZUMAb, and the absolute bioavailability of itolizumab (EQ001) SC. The trial featured a randomized, single-blind, parallel group design for the comparability component, and an open-label design for the absolute bioavailability component. Seven subjects enrolled in the study and received single doses of 0.4 mg/kg (one subject each itolizumab (EQ001) SC, itolizumab (EQ001) IV, ALZUMAb, and placebo) and 0.8 mg/kg (one subject each itolizumab (EQ001) SC, itolizumab (EQ001) IV, and ALZUMAb); five subjects completed the study, and one subject each that received itolizumab (EQ001) IV and ALZUMAb in the 0.8 mg/kg group discontinued dosing early due to AEs (one subject experienced persistent cough and dizziness; one subject experienced nausea). The infusion of single doses of both itolizumab (EQ001) IV and ALZUMAb was associated with the development of transient, reversible, grade 2 to 3 decreases in lymphocyte counts in the healthy subjects. As a result, Stage 2 of the trial was terminated early following the enrollment of seven subjects, yielding limited overall safety data and insufficient PK data for evaluation. There were no SAEs reported. No other clinically meaningful abnormalities or trends were noted in clinical chemistry, hematology, and urinalysis parameters. Similar to Stage 1, a transient decrease in T cells expressing CD4, and to a lesser extent CD8, a two- to three-times increase in the proportion of T_{reg} cells, and saturation of CD6 receptors were observed across itolizumab (EQ001) and ALZUMAb cohorts.

While similar decreases in lymphocyte counts have not been reported with ALZUMAb previously, the timing of hematologic assessments in prior clinical studies may not have occurred at sufficiently early time-points to detect this transient response. Additionally, ALZUMAb had previously only been dosed in patients with active autoimmune disease and not healthy subjects. Importantly, the magnitude and kinetics of lymphocyte decreases were similar for itolizumab (EQ001) IV and ALZUMAb in Stage 2, while administration of itolizumab (EQ001) SC demonstrated milder decreases in lymphocyte counts, which would be expected based on the different PK properties of SC versus IV formulations. Furthermore, ALZUMAb had been well tolerated with demonstrated safety and clinical activity in three clinical studies in India in patients with rheumatoid arthritis and chronic plaque psoriasis, with a total of 333 patients exposed to ALZUMAb to date in clinical trials at doses ranging from 0.2 mg/kg to 1.6 mg/kg over a period of four years. Therefore, we believe the transient decreases in lymphocyte counts seen in the Phase 1 clinical trial in healthy subjects represents a PD property of both itolizumab (EQ001) and ALZUMAb that will be monitored going forward, and the results of the Phase 1 clinical trial support the advancement of itolizumab (EQ001) SC and IV into further clinical development in patients with immuno-inflammatory disease.

Our Initial Clinical Indications

We are currently developing itolizumab (EQ001) for the treatment of aGVHD, lupus/lupus nephritis, and uncontrolled asthma. We have three open INDs with the FDA for the use of itolizumab (EQ001) in the treatment of aGVHD, lupus/lupus nephritis, and COVID-19. We initiated the EQUATE study for the treatment of aGVHD in March 2019, the EQUALISE study in patients with SLE and lupus nephritis in September 2019, and the EQUIP study in patients with uncontrolled asthma in June 2019. In November 2020, we announced that due to the rapidly evolving COVID-19 vaccine and treatment landscape, we elected not to initiate the EQUINOX Phase 3 clinical trial to evaluate itolizumab (EQ001) in hospitalized COVID-19 patients. We continue to evaluate additional indications for future development.

Graft-Versus-Host Disease Market Overview

GVHD is a multisystem disorder that is a common complication of allogeneic hematopoietic stem cell transplants, or allo-HSCT, caused by the transplanted immune system, more specifically T_{eff} cells, recognizing and attacking the recipient's body. GVHD is the leading cause of non-relapse mortality in patients receiving an allo-HSCT. The risk of GVHD limits the number and type of patients receiving HSCT and we believe that a therapy that can attenuate GVHD risk could significantly expand the patient population eligible for allo-HSCT.

According to the Center for International Blood & Marrow Transplant Research and other published reports, there were approximately 10,000 allo-HSCT's expected to have been performed in the United States in 2020 and the number of procedures has grown at an average annual growth rate of approximately 4% since 2007. Approximately 30-70% of HSCT recipients develop aGVHD. Five year survival for patients that respond to first-line treatment with corticosteroids has been reported to be as low as 53% while in steroid refractory aGVHD, the overall 5 year survival has been reported to be as low as 5%. We estimate that the incidence of aGVHD in 2020 was approximately 5,800 patients and the total prevalence of GVHD was approximately 16,000 patients. We estimate that by the year 2030, the annual incidence of aGVHD could be up to 7,000 patients and the total prevalence of GVHD could be up to 20,000 patients.

Rationale for Itolizumab (EQ001) for the Treatment of GVHD

Third-party Clinical Experience with Targeting CD6 in GVHD

Clinical evidence to support the rationale of treating GVHD with itolizumab (EQ001) comes from previously-reported third-party clinical experience with CD6 expressing T cell depletion in patients receiving bone marrow transplants for hematologic malignancies where it has been demonstrated that using an anti-CD6 monoclonal antibody to deplete T cells from donor bone marrow or lymphocyte infusions has the potential to prevent aGVHD. In a study evaluating the clinical effects of selective *in vitro* CD6 expressing T cell depletion of donor allogeneic bone marrow using a monoclonal antibody to CD6 and rabbit complement, Soiffer et al. reported that *in vitro* T cell depletion with an anti-CD6 monoclonal antibody effectively reduced the incidence of both acute and chronic GVHD after allogeneic bone marrow transplant without compromising engraftment.

Subsequent studies further confirmed the feasibility of CD6 expressing T cell depletion in patients undergoing allogeneic bone marrow transplantation from human leukocyte antigen identical related and unrelated donors. In these studies, CD6 expressing depletion of the donor stem cell product was the sole method for GVHD prophylaxis. The low incidence of aGVHD reported in patients receiving allogeneic bone marrow treated with anti-CD6 monoclonal antibodies was attributed to the early appearance of a population of peripheral CD3 expressing T lymphocytes with a CD6-negative phenotype, which showed diminished reactivity to allogeneic stimulation in mixed lymphocyte reaction assays. Although the above described approach is one of *ex vivo* CD6 expressing T cell depletion, we believe that it further supports the role of CD6 expressing T cells in aGVHD pathogenesis and validates CD6 as a potentially important target for modulation for the treatment of GVHD.

Itolizumab (EQ001) Selectively Targets GVHD Pathogenesis

There is a high unmet medical need for a safe, effective and targeted treatment of GVHD. We believe itolizumab (EQ001) has the potential to be a best-in-class treatment for aGVHD based on its ability to target the underlying biology of GVHD in a highly selective way. Further, this approach is also promising as we consider future development in the prevention of GVHD and the treatment of cGVHD.

It is well established that T_h17 cells, driven by pSTAT3 signaling, play a role in the pathogenesis of aGVHD, and studies have shown that pSTAT3 was significantly increased in T cells of GVHD patients. In aGVHD, additional studies have reported that T_h17 cells and IL-17 serum levels were significantly elevated in patients at onset compared with HSCT patients without aGVHD. As the disease progresses, T_h17 cells traffic from the peripheral blood into GVHD target tissues where they trigger damage. Furthermore, the expansion of T_h17 cells in the early phase of aGVHD plays a role in the transition to cGVHD. In GVHD patients, studies have shown a high T_h17:T_{reg} ratio suggesting a loss of tolerance. Notably the increased number of circulating T_h17 cells was accompanied by a decrease in T_{reg} cells, suggesting a loss of T_{eff} cell regulation. Such regulatory mechanisms are crucial for eliminating alloreactive T cell activity, thus preventing sustained autoimmune responses and tissue destruction in GVHD.

We believe itolizumab (EQ001) can selectively target elements of the underlying pathogenesis of aGVHD by: a) inhibiting T_{eff} cells proliferation; b) downregulating the STAT3 pathway associated with development of pathogenic T_h17 cells driving GVHD pathogenesis; c) inhibiting trafficking of T_{eff} cells into GVHD target tissues preventing further inflammation and organ damage; and d) reducing the T_h17:T_{reg} ratio associated with the development of GVHD and thereby promoting tolerance.

Development Plan in GVHD

In the first quarter of 2019, we initiated the EQUATE study, a Phase 1b/2 clinical trial that is expected to enroll approximately 84 patients in order to evaluate the safety, tolerability, PK and clinical activity of itolizumab (EQ001) in newly diagnosed aGVHD patients. All patients are administered itolizumab (EQ001) as a first-line therapy concomitant with steroid use upon first presentation of aGVHD.

The Phase 1b part of the trial is an open-label study that is enrolling up to 24 adult patients with Grade III-IV aGVHD. Following completion of the initial 3-by-3 cohort, a protocol amendment expanded enrollment to patients with Grade II aGVHD and Ann Arbor scores of 2 or 3, which allowed the inclusion of subjects with Grade II aGVHD with a higher risk of mortality and poor outcomes. We also expanded the allowable steroid dosing window prior to initiation of itolizumab (EQ001) from within 72 hours to within 7 days. The dosing construct consists of successive cohorts of three to six patients treated with multiple ascending doses of itolizumab (EQ001) ranging from 0.4 mg/kg up to as high as potentially 2.4 mg/kg. The primary objective of this part of the trial is to assess the safety and tolerability of itolizumab (EQ001) and to determine the optimal dose. Secondary objectives include assessing pharmacological activity of itolizumab (EQ001). Once an optimal dose is determined, and if the observed safety, tolerability, and pharmacological activity of itolizumab (EQ001) warrant, we will pursue advancing the development of itolizumab (EQ001) into later stage clinical development. An overview of the design of the Phase 1b part of the EQUATE study is presented in **Figure 7**.

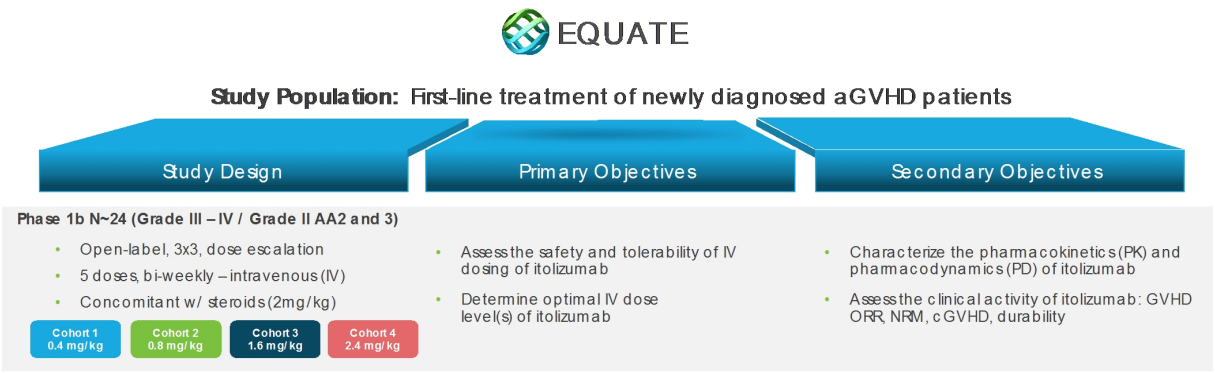


Figure 7: Overview of the EQUATE study design

In November 2020, we reported positive interim results from the ongoing Phase 1b portion of the clinical trial. The overall response rate across the first three dose cohorts was 80%, and seven of eight patients responding achieved a CR and one patient achieved a VGPR by Day 29. Responses observed have been rapid and durable, with a majority of patients achieving a CR within the first 15 days and maintaining responses through Day 85. To date, adverse events reported with the clinical trial have been consistent with the safety profile previously reported for itolizumab and those common in the aGVHD patient population. In review of the totality of safety, efficacy and pharmacodynamic data, the independent data monitoring committee has recommended to expand cohorts 2 and 3 (0.8 and 1.6 mg/kg dose, respectively) and proceed with enrollment. We plan on reporting topline data across all completed cohorts from the Phase 1b portion of the clinical trial during the first half of 2021.

The current design of the Phase 2 part of the EQUATE study is a randomized, double-blind, placebo-controlled study of up to 60 additional patients with Grade II-IV aGVHD, randomized in a 2:1 ratio with 40 patients on active treatment of itolizumab (EQ001) and 20 patients on placebo. The primary objective of the Phase 2 part of the trial is to assess the clinical activity of itolizumab (EQ001) and secondary objectives include further characterizing safety and tolerability. The sample size, design, and potential registrational sufficiency of this next trial may be subject to change depending on what is learned from the remaining Phase 1b clinical trial and based on additional discussions with regulatory agencies.

Itolizumab (EQ001) has been granted Fast Track designation for the treatment of aGVHD and Orphan Drug designations for both the prevention and treatment of aGVHD by the FDA.

Lupus Market Overview

SLE is a heterogeneous, multisystem, autoimmune disease characterized by the presence of multiple autoantibodies and deposition of immune complexes in various tissues. Based on publicly available sources, we estimate that SLE impacts between 250,000 and 322,000 people in the United States.

Lupus nephritis is the most frequent, serious manifestation of SLE occurring in up to 30-60% of SLE patients. It is estimated there are over 100,000 patients living with lupus nephritis in the United States; despite the significant number of people affected, there are currently only two FDA-approved drugs for this condition.

Current Therapies for Lupus Nephritis and their Limitations

Current standard-of-care therapy for the most aggressive type of lupus nephritis, called proliferative lupus nephritis or Class III or IV lupus nephritis, consists of broad-based immunosuppressive drugs, such as prednisolone, mycophenolate mofetil, or MMF, and cyclophosphamide, which come with significant toxicities. Lupus nephritis is predominantly a disease of young women, and these drugs carry with them a number of toxicities that are particularly problematic for this population including weight gain, edema, moon face, infection risk, diabetes, and infertility.

While these therapies have improved 5-year survival for lupus nephritis patients, as many as 50-75% of patients are refractory to treatment and those that respond will likely relapse within 5 years. In those patients who are refractory or relapse after initial treatment with induction therapy, there is no consensus or strong evidence to support what treatments may be effective. The prognosis for patients with proliferative lupus nephritis remains poor and up to 40% of patients will progress to end-stage renal disease, or ESRD, requiring dialysis or kidney transplant. Overall, the available options are quite limited for lupus nephritis patients, particularly those that are refractory or relapse to standard induction therapy. Recently, two new therapies have been approved for lupus nephritis. GlaxoSmithKline's Benlysta, which was approved for lupus nephritis in December 2020, targets BLyS and inhibits the stimulation of autoreactive B-cells. Aurinia Pharmaceuticals, Inc.'s Lupkynis™, which was approved in January 2021, is a calcineurin inhibitor that blocks IL-2 expression and inhibits autoreactive T-cells. Despite those recent approvals, there remains a significant need for new therapies that are more effective, can maintain a durable response, and carry a better safety profile. Given the high unmet medical need, we will focus our approach initially on lupus nephritis patients.

Rationale for Itolizumab (EQ001) for the Treatment of Lupus Nephritis

Itolizumab (EQ001) Selectively Targets T_{eff} Cells That Play a Central Role in the Pathogenesis of Lupus Nephritis

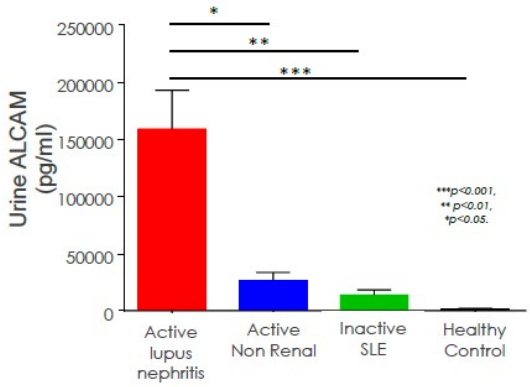
Lupus nephritis is a devastating disease that affects roughly half of the patients with SLE; patients with lupus nephritis have a substantially increased risk for ESRD and death. Despite the presence of autoantibody formation and inflammatory cytokines in SLE and lupus nephritis, B-cell-directed and single cytokine targeted therapies have largely failed in clinical development. More recent evidence has demonstrated that T_{eff} cells play a central role in the pathogenesis of both SLE and lupus nephritis in that they mediate tissue damage and also enhance the production of autoantibodies by promoting B cell differentiation, proliferation and maturation. Multiple T_{eff} cells/cytokines, such T_h1/IFN-γ, T_h2/IL-4 and T_h17/IL-17, have all been implicated in the immunopathogenesis of both SLE and lupus nephritis, highlighting the complex nature of the disease. However, T_h17 cells are emerging as key targets as it has been demonstrated that high levels of IL-17 predict poor histopathological outcome after immunosuppressive therapy in patients with lupus nephritis. Elevated levels of T_h17 cells are accompanied by a decrease of T_{reg} cells, suggesting that loss of this functional immune balance may be involved in the pathogenesis of renal damage in SLE patients. Therefore, targeting T_{eff} cells, or molecules that modulate T_{eff} cell activity, while preserving T_{reg} activity could prove to be a successful therapeutic strategy for patients with SLE and lupus nephritis.

We believe the unique mechanism of action of itolizumab (EQ001) can selectively target elements of the underlying pathogenesis of lupus nephritis by: a) inhibiting multiple pathogenic T_{eff} cells and cytokine secretion; b) inhibiting trafficking of T_{eff} cells into kidney tissues; and c) reducing the T_h17:T_{reg} ratio associated with lupus nephritis.

Translational Research Supporting Itolizumab (EQ001) in Lupus Nephritis

Given the central role that T_{eff} cells play in the immunopathogenesis of SLE and lupus nephritis, we believe itolizumab (EQ001), which has been shown to block the CD6-ALCAM pathway and inhibit both the activity as well as trafficking of T_{eff} cells into tissues, represents a promising therapeutic approach in this disease. To support this hypothesis, data from preclinical experiments in animal models of SLE and glomerulonephritis demonstrated that treatment with an anti-CD6 mAb lowers pro-inflammatory cytokines and improves disease activity, proteinuria, and renal function. In addition, validation for targeting the CD6-ALCAM pathway with itolizumab (EQ001) in lupus nephritis is bolstered by translational research findings in human tissue. An analysis of kidney biopsy specimens from patients with lupus nephritis demonstrates increased expression of CD6 on infiltrating T cells as well as high levels of expression of ALCAM on antigen presenting cells (e.g. macrophages) as well as renal resident cells across multiple compartments of the kidney.

Research conducted at the University of Houston, supported by a Target Identification in Lupus Grant from the Lupus Research Alliance, has shown that patients with active lupus nephritis have substantial elevations in urinary ALCAM and that ALCAM levels in the urine track with disease activity. See **Figure 8**. These data further highlight the potentially important pathogenic role of the CD6-ALCAM pathway in patients with lupus nephritis.



	AUC (95% CI)	P value	Sensitivity	Specificity	PPV	NPV
Urinary ALCAM	**0.91 (0.86 – 0.96)**	**< 0.0001**	**0.91**	**0.82**	**0.88**	**0.86**
Positive anti-dsDNA	NA		0.38	0.57	0.57	0.38
Low complement	NA		0.56	0.55	0.65	0.46

Figure 8: ALCAM is a predictive biomarker in patients with active lupus nephritis. The graph depicts levels of ALCAM in the urine of active lupus nephritis, active (non-renal) SLE, inactive SLE and healthy controls by ELISA. ALCAM was highest in active lupus nephritis patients while SLE patients were higher than healthy controls. The table compares the performance of urinary protein markers in differentiating active lupus nephritis (N=89) from inactive lupus nephritis (N=60) in African-American and Hispanic systemic lupus erythematosus patients.

In addition to target validation, this research on urinary biomarkers may also have important implications in how we develop itolizumab (EQ001) in lupus nephritis. The ease and scalability of using urine as a non-invasive liquid biopsy of the kidney provides us an opportunity to potentially change the way we identify and treat patients with lupus nephritis. A biomarker-guided treatment approach using real-time urinary testing of the CD6-ALCAM pathway to determine the right patients for therapy, guide treatment, and monitor the disease has the potential to increase the chance of advancing a targeted therapeutic to drug approval and significantly improve patient care. Specifically, elevations in urinary biomarkers, such as soluble ALCAM or CD6, could be used to identify patients most likely to respond to (itolizumab) EQ001. An evaluation of these biomarkers will be an important part of the development program and forms the initial basis for exploring a personalized medicine biomarker strategy with itolizumab (EQ001).

Development Plan in Lupus Nephritis

Itolizumab (EQ001) has been granted Fast Track designation by the FDA for the treatment of lupus nephritis. In September 2019, we initiated a Phase 1b dose-escalating study of itolizumab (EQ001) administered subcutaneously in SLE and lupus nephritis patients. The study, called the EQUALISE study, is comprised of two parts. The first part is focused on evaluating the safety and tolerability of itolizumab (EQ001) in patients with SLE followed by a second part in lupus nephritis patients where, in addition to safety and tolerability, potential clinical activity of itolizumab (EQ001) will be assessed based on proteinuria levels and SLEDAI-2K scores. In March 2020, as a result of impacts and risks associated with the global pandemic caused by COVID-19, we decided to pause enrollment of our EQUALISE study, and in July 2020, we announced that patient enrollment in this trial had resumed. The second part of the EQUALISE study is focusing on patients with active proliferative lupus nephritis who have had an inadequate response to existing induction regiments and other therapies. In addition to evaluating the renal response to therapy, we are also capturing improvements in overall SLE disease activity across other organ systems and measuring a number of standard disease activity biomarkers in both patients with SLE without nephritis and patients with lupus nephritis. An overview of the design of the EQUALISE study is presented in **Figure 9**.

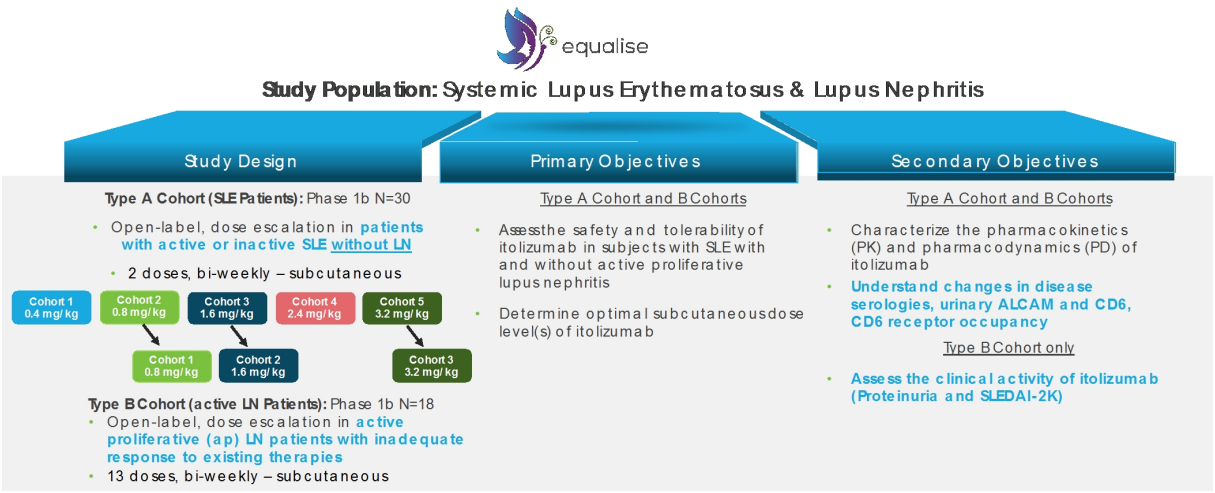


Figure 9: Overview of the EQUALISE study design

Beyond these typical measures, we may also include the co-development and validation of a diagnostic biomarker related to the CD6-ALCAM pathway and other urinary biomarkers as part of the study, with focus on generating initial data to support the strategy of developing a companion diagnostic to identify lupus nephritis patients most likely to respond to itolizumab (EQ001).

Including biomarker development in early stage clinical trials can guide us on how best to use urinary biomarkers in later stages of clinical development and provides a basis for future regulatory interactions for defining a roadmap for the co-development of a companion diagnostic. As such, we believe our approach is differentiated from other programs in development.

Asthma Market Overview

Asthma is a heterogeneous disease characterized by different T_{eff} cell subtypes and other innate immune cells driving both allergic and autoimmune mechanisms, leading to chronic airway inflammation. Classically, asthma has been defined by two distinct immune phenotypes. There is eosinophilic asthma, characterized by high levels of eosinophils and production of immunoglobulin E, or IgE, driven predominantly by high levels of T_h2 T_{eff} cells and cytokines such as IL-4, IL-5 and IL-13, or T_h2-high. There is also non-eosinophilic asthma, characterized by low to no eosinophils and evidence suggests that other T_{eff} cells and cytokines such as T_h17 and IL-17, or non-T_h2, play a role here. While biomarkers such as fractional exhaled nitric oxide (FeNO), or blood eosinophil counts may identify allergic/eosinophilic inflammation for a subset of T_h2-high asthma patients, there is no effective biomarker for non-T_h2 asthma, which is mostly characterized by treating clinicians by the absence of the above markers. Further complicating this issue is that many patients may have the presence of both T_h2 and T_h 17 effector cells, or T_h2-low, contributing to the immunopathogenesis of their asthma. Studies have demonstrated that T_h2 and T_h17 cells are reciprocally regulated and as a result, if a drug only downregulates T_h2-mediated inflammation, then a patient may experience increased inflammation caused by T_h17 cells, and vice versa. This may explain why many patients with this disease are refractory to both steroids and the current biologics targeting eosinophils or T_h2-mediated pathways. Therefore, a therapy with a broad mechanism targeting multiple T_{eff} cell or cytokines may be required to adequately address this dynamic and heterogeneous disease.

Based on publicly available sources, we estimate that asthma impacts approximately 26 million individuals in the United States. Of these, 5–10%, or approximately 1.3–2.6 million individuals, suffer from severe disease. We estimate that 50% of the severe asthma population, or 0.6–1.3 million individuals, are uncontrolled with standard-of-care therapies such as long-acting beta-agonists and high-dose corticosteroids. We estimate that 50–60% of the uncontrolled severe asthma population fall within the non-eosinophilic T_h2-low/non-T_h2 subtype. We also estimate that 40-50% of the uncontrolled severe asthma population fall within the eosinophilic (T_h2-high) subtype; these patients may initially respond to treatment with steroids and recently approved biologic therapies which target eosinophils, IgE or T_h2-pathways.

Current Therapies for Uncontrolled Moderate to Severe or Severe Asthma and Their Limitations

Recently, several biologic therapies that specifically target IgE or T_h2-mediated cytokines have been approved by the FDA for the treatment of uncontrolled moderate to severe or severe asthma. While these therapies have been effective for certain patients with T_h2-high inflammation they have had a minimal impact in patients with T_h2-low/non-T_h2 inflammation as characterized by low levels of eosinophils, or lack thereof.

Genentech Inc.'s XOLAIR® (omalizumab), is an anti-IgE approved for the treatment of moderate to severe persistent allergic asthma that is not controlled by inhaled corticosteroids. Other recently approved biologic therapies that are directed against IL-5 or the IL-5 receptor, which together mediate eosinophil development and inflammation of the airways, include NUCALA® (mepolizumab), marketed by GlaxoSmithKline plc, CINQAIR® (reslizumab), marketed by Teva Pharmaceutical Industries Limited and FASENRA® (benralizumab), marketed by AstraZeneca plc.

In addition, Regeneron Pharmaceuticals, Inc. and Sanofi-Aventis U.S. LLC received approval for DUPIXENT® dupilimab, an anti-IL-4 receptor antibody, as an add-on maintenance treatment in patients with moderate to severe asthma aged 12 years and older with an eosinophilic phenotype or with oral corticosteroid dependent asthma.

Rationale for itolizumab (EQ001) for the Treatment of Uncontrolled Asthma

Itolizumab (EQ001) Selectively Targets Both T_h2-mediated and Non-T_h2-mediated Inflammation in Asthma Pathogenesis

There remains high unmet medical need for safe, effective and targeted treatments for patients with uncontrolled asthma, especially for those with non-eosinophilic asthma for which there are currently no FDA-approved treatments. Given the limited nature of existing biomarkers coupled with the reciprocally regulated nature of the disease, we believe there remains an unmet need for a treatment that can cover the full spectrum of uncontrolled asthma patients including T_h2-high and non-T_h2 asthma.

While eosinophilic asthma is associated with T_h2-mediated inflammation, non-eosinophilic asthma is associated with T_h2 and/or T_h17-mediated inflammation. Preclinical data demonstrates that modulating the CD6-ALCAM pathway can broadly inhibit the activity and trafficking of both T_h2 and T_h17 T_{eff} cells reducing levels of pathogenic cytokines such as IL-4, IL-5, IL-13 and IL-17.

We believe the unique mechanism of action of itolizumab (EQ001) can selectively target elements of the underlying pathogenesis of both eosinophilic (Th2-high) and non-eosinophilic (T_h2-low and non-T_h2) severe asthma by: a) inhibiting both T_h2 and T_h17 cell proliferation and cytokine secretion; b) inhibiting trafficking of T_h2 and T_h17 cells into lung tissues; and c) reducing the T_h2 or T_h17:T_{reg} ratios associated with severe asthma. See **Figure 10.**

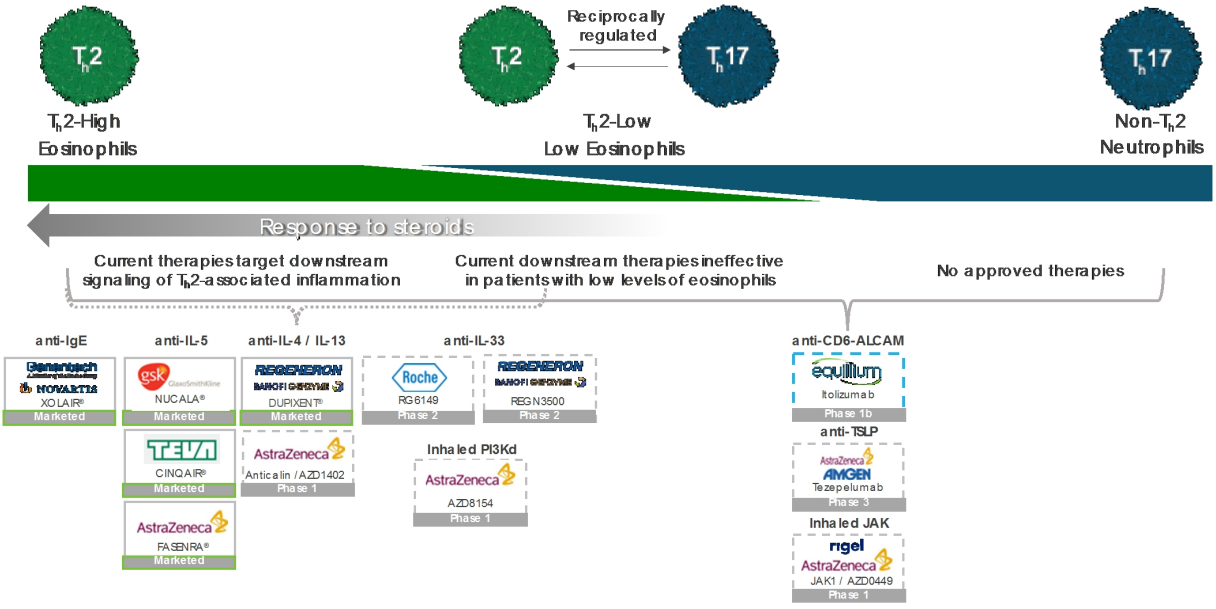


Figure 10: Th17 cells expressing CD6 drive severe refractory asthma. Current approved therapeutic approaches target downstream signaling of Th2-mediated inflammation characterized by high levels of eosinophils and are largely ineffective in patients with Th2-low or non-Th2-mediated inflammation characterized by low levels of eosinophils. We believe the upstream mechanism of itolizumab (EQ001) can uniquely address both the Th2- and Th17-mediated inflammation driving severe asthma pathogenesis.

Translational Research Program Supporting Itolizumab (EQ001) in Uncontrolled Asthma

To further validate the use of itolizumab (EQ001) in uncontrolled asthma, we have an ongoing translational research program assessing the role of the CD6-ALCAM pathway in severe asthma patients. Preliminary findings derived from analysis of gene expression datasets support the presence of increased levels of CD6+, CD4 T cells, and ALCAM expression in the lungs of severe asthma patients. Gene expression in cells collected from the lungs of non-asthma, steroid-sensitive moderate asthma, and steroid-insensitive severe asthma patients, suggest that CD6 is significantly elevated in severe asthma, likely due to increases in CD4 T cells as supported by higher CD4 gene expression. A subset of these CD4 T cells are believed to be T_h17 cells as the severe asthma patients also demonstrated significantly higher levels of the T_h17 cytokines such as IL-17A and IL-17F. Interestingly, the ligand of CD6, ALCAM, may also be implicated in severe asthma. Analysis of gene expression in lung tissue from a separate set of patients suggests higher expression of the ALCAM within the airway of patients who have died from asthma, establishing the presence of the necessary components of the CD6 pathway in asthmatic lungs.

Development Plan in Uncontrolled Moderate to Severe Asthma

We initiated the EQUIP study for the treatment of uncontrolled moderate to severe asthma in June 2019. In March 2020, as a result of impacts and risks associated with the current global pandemic caused by COVID-19, we decided to pause enrollment of the EQUIP study, and in July 2020, we announced that patient enrollment in this trial had resumed. The study is enrolling uncontrolled moderate to severe asthma patients regardless of baseline eosinophil level. Itolizumab (EQ001) is administered subcutaneously in this study and a number of dose levels are being examined using a sequential dose escalation study design. The study objectives include an assessment of safety, PK/PD markers, and early evaluation of clinical efficacy parameters. Despite our best efforts, enrollment during the pandemic continues to be challenging due to patients' high-risk status for COVID-19 and a decrease in asthma exacerbations because of stay-at-home and social distancing measures. We have amended the current protocol to assess primarily safety measures and we expect to report topline data from the EQUIP study in the second half of 2021. An overview of the design of the EQUIP study is presented in **Figure 11**.

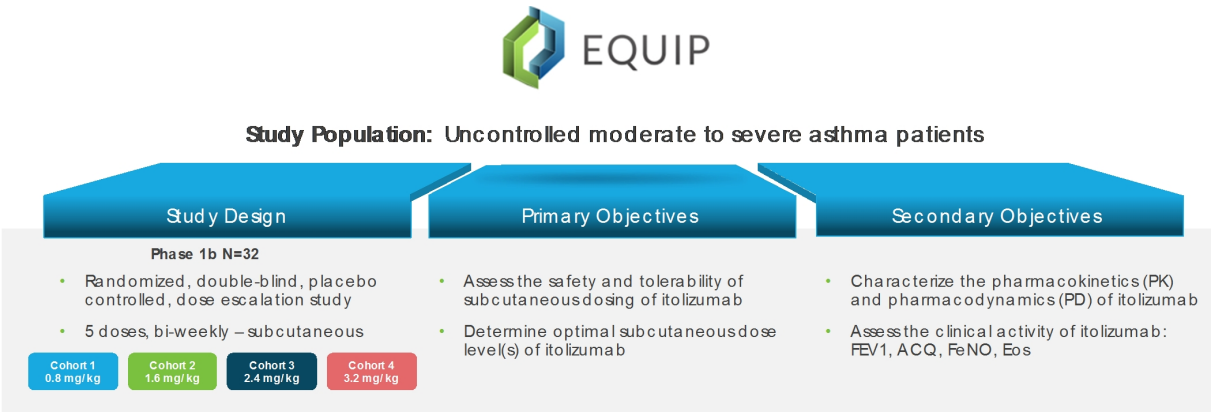


Figure 11: Overview of the EQUIP study design

Partnerships

Collaboration and License Agreement with Biocon

In May 2017, we entered into a collaboration and license agreement with Biocon, as amended in September 2018, April 2019, and December 2019, or the Biocon License, pursuant to which Biocon granted us an exclusive license to develop, make, have made, use, sell, have sold, offer for sale, import and otherwise exploit itolizumab and any pharmaceutical composition or preparation containing or comprising itolizumab that uses Biocon technology or Biocon know-how, or collectively, a Biocon Product, in the United States, Canada, Australia and New Zealand, or the Equillium Territory. However, unless we achieve certain regulatory and development milestones within a specific time period, the licensed rights, other than development rights, are limited to the fields of orphan indications and the treatment of conditions related to asthma and lupus. We also have the right to sublicense through multiple tiers to third parties, provided such sublicenses comply with the terms of the Biocon License and

we provide Biocon a copy of each sublicense agreement within 30 days of execution. If we grant a third party a sublicense of our rights to develop and commercialize Biocon Products in Australia or New Zealand, we will be required to pay Biocon a high double-digit percentage of any upfront payment we receive from such sublicensee for such sublicense, as well as a high double-digit percentage of any additional payments we receive from such sublicensee for such sublicense, including but not limited to royalty payments on net sales of Biocon Products by such sublicensee. Under the Biocon License, we granted back to Biocon a license to use our technology and know-how related to itolizumab and Biocon Products in certain countries outside of the Equillium Territory.

In consideration of the rights granted to us by Biocon, we issued to Biocon 2,316,134 shares of common stock. In addition, we are obligated to pay Biocon up to an aggregate of $30 million in regulatory milestone payments upon the achievement of certain regulatory approvals and up to an aggregate of $565 million in sales milestone payments upon the achievement of first commercial sale of product and specified levels of product sales. We are also required to pay royalties on tiers of aggregate annual net sales of Biocon Products by us, our affiliates and our sublicensees in the United States and Canada at percentages from the mid-single digits to sub-teen double digits and on tiers of aggregate annual net sales of Biocon Products by us and our affiliates (but not our sublicensees) in Australia and New Zealand, in each case, subject to adjustments in certain circumstances. Biocon is also required to pay us royalties at comparable percentages for sales of itolizumab outside of the Equillium Territory if the approvals in such geographies included or referenced our data, including data from certain of our clinical trials, subject to adjustments in certain circumstances. Under the Biocon License, net sales are calculated on a country-by-country basis and are subject to adjustments, including whether the Biocon Product is sold in the form of a combination product.

The Biocon License will continue until the expiration of all royalty obligations, unless terminated earlier. We are obligated to pay royalties on a product-by-product and country-by-country basis from the first commercial sale of a Biocon Product in a country until the latest of ten years from the first commercial sale of such Biocon Product in such country, the expiration of regulatory exclusivity for such Biocon Product in such country, and the expiration of the last-to-expire Biocon patent covering such Biocon Product in such country. We may terminate the Biocon License unilaterally, with or without reason, upon 120 days' prior written notice and either party may terminate the Biocon License in the event of the other party's material breach of the Biocon License that remains uncured for 90 days after receipt of notice from the non-breaching party. Upon termination by us unilaterally or by Biocon for our material breach, Biocon will retain its license to use our intellectual property related to itolizumab and Biocon Products in certain countries outside the Equillium Territory, and we also will grant Biocon a non-exclusive license, and a right of first negotiation to an exclusive license, to use our intellectual property related to itolizumab and Biocon Products in the Equillium Territory. Further, we are subject to certain diligence obligations related to development, commercialization and funding activities and if we fail to comply with these obligations Biocon may, in certain circumstances, terminate the Biocon License and, in certain other circumstances, such failure may result in the permitted fields of use for licensed Biocon Products being limited to orphan indications and the treatment of asthmatic conditions.

Clinical Supply Agreement with Biocon

In May 2017, in connection with the Biocon License, we entered into a clinical supply agreement, or the Biocon Supply Agreement, with Biocon, pursuant to which Biocon agreed to be our exclusive supplier of itolizumab clinical drug product for up to three concurrent orphan drug clinical indications at no cost until our first U.S. regulatory approval and all other clinical drug product at cost. The Biocon Supply Agreement will remain in effect until the expiration or termination of the Biocon License.

Intellectual Property

Our intellectual property is critical to our business and we strive to protect it, including by obtaining and maintaining patent protection in the United States and internationally for our product candidates, novel biological discoveries, epitopes, new therapeutic approaches and potential indications, and other inventions that are important to our business. For our product candidates, generally we initially pursue patent protection covering compositions of matter, antibody sequence diversity, epitopes, functional activity and methods of use. Throughout the development of our product candidates, we will seek to identify additional means of obtaining patent protection that would potentially enhance commercial success, including through additional methods of use and biomarker and companion diagnostic related claims.

As of March 3, 2021, our patent portfolio related to itolizumab included patents and patent applications exclusively licensed from Biocon in the United States, Australia, Canada, and New Zealand, as well as a pending provisional application and pending international and national stage patent applications filed under the Patent Cooperation Treaty, or PCT, that we own. The terms of the Biocon License are discussed above in "Business—Partnerships—Collaboration and License Agreement with Biocon and Clinical Supply Agreement with Biocon."

Specifically, as of March 3, 2021, our licensed rights from Biocon related to itolizumab included six issued patents in the United States, two issued patents in Canada, and pending patent applications in the United States, Australia, Canada, and New

Zealand. Five of our issued U.S. patents are expected to expire in 2028 (absent any patent term extension for regulatory delays) and include claims directed to the antibody sequence of itolizumab and methods of formulating and using itolizumab alone or in combination with other agents to treat various T cell mediated diseases and disorders including GVHD and transplant rejection. One of our issued U.S. patents is expected to expire in 2034 (absent any patent term extension for regulatory delays), and includes claims directed to treating multiple sclerosis with itolizumab in certain patients exhibiting increased numbers of T_h17 cells, wherein the method includes monitoring IL-23R expression. Our issued Canadian patents are expected to expire between 2027 and 2030. Our licensed rights from Biocon include a pending patent application family related to methods of using itolizumab to treat lupus, which is pending in the United States, Australia, Canada, and New Zealand. Patents that may issue from our pending in-licensed patent applications are expected to expire between 2027 and 2037, absent any patent term adjustments or extensions.

Additionally, we own one patent application family related to methods of using itolizumab to treat severe asthma, which is pending in the United States, Australia, Canada, and New Zealand. If granted, any patents that issue from this patent family are expected to expire in 2039, absent any patent term adjustments or extensions.

We also co-own one pending PCT patent application with the University of Houston System, which relates to diagnostic methods for using itolizumab to treat lupus nephritis. If granted, any patents that issue from this patent family are expected to expire in 2040, absent any patent from adjustments or extensions.

We file U.S. provisional patent applications as well as U.S. non-provisional applications and PCT applications that claim the benefit of the priority date of earlier filed provisional applications, when applicable. Provisional applications for patents were designed to provide a lower-cost first patent filing in the United States. Corresponding non-provisional patent applications must be filed not later than 12 months after the provisional application filing date. The corresponding non-provisional application benefits in that the priority date(s) of the patent application is/are the earlier provisional application filing date(s), and the patent term of the finally issued patent is calculated from the later non-provisional application filing date. This system allows us to obtain an early priority date, add material to the patent application(s) during the priority year, obtain a later start to the patent term and to delay prosecution costs, which may be useful in the event that we decide not to pursue examination in an application. The PCT system allows a single application to be filed within 12 months of the original priority date of the patent application, and to designate all of the 153 PCT member states in which national patent applications can later be pursued based on the international patent application filed under the PCT. The PCT searching authority performs a patentability search and issues a non-binding patentability opinion which can be used to evaluate the chances of success for the national applications in foreign countries prior to having to incur the filing fees. Although a PCT application does not issue as a patent, it allows the applicant to seek protection in any of the member states through national-phase applications. At the end of the period of 2 1/2 years from the first priority date of the patent application, separate patent applications can be pursued in any of the PCT member states either by direct national filing or, in some cases by filing through a regional patent organization, such as the European Patent Organization. The PCT system delays expenses, allows a limited evaluation of the chances of success for national/regional patent applications and enables substantial savings where applications are abandoned within the first 2 1/2 years of filing.

We intend to prosecute the pending applications that we own and in-license and to pursue patent issuance and protection in key commercial markets where we expect significant product sales may occur.

With the enactment of the Biologics Price Competition and Innovation Act of 2009, or BPCIA, an abbreviated pathway for the approval of biosimilar and interchangeable biological products was created. The abbreviated regulatory pathway establishes legal authority for the FDA to review and approve biosimilar biologics, including the possible designation of a biosimilar as interchangeable based on its similarity to an existing reference product. Under the BPCIA, an application for a biosimilar product cannot be approved by the FDA until 12 years after the original branded product is approved under a Biologics License Application, or BLA.

The patent positions of biotechnology companies like ours are generally uncertain and involve complex legal, scientific and factual questions. We recognize that the ability to obtain patent protection and the degree of such protection depends on a number of factors, including the extent of the prior art, the novelty and non-obviousness of the invention, and the ability to satisfy the enablement requirement of the patent laws. In addition, the coverage claimed in a patent application can be significantly reduced before the patent is issued, and its scope can be reinterpreted after issuance. Consequently, we may not obtain or maintain adequate patent protection for any of our product candidates. 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 issued patents will provide sufficient proprietary protection from competitors. Any patents that we hold may be challenged, circumvented or invalidated by third parties.

Our commercial success will also depend in part on not infringing the proprietary rights of third parties. In addition, we have licensed rights under proprietary technologies of third parties to develop, manufacture and commercialize specific aspects of our products and services. It is uncertain whether the issuance of any third party patent would require us to alter our development or commercial strategies, alter our processes, obtain licenses or cease certain activities. The expiration of patents or patent applications licensed from third parties or our breach of any license agreements or failure to obtain a license to proprietary rights that we may require to develop or commercialize our future technology may have a material adverse impact on us. If third parties prepare and file patent applications in the United States that also claim technology to which we have rights, we may have to participate in interference proceedings in the United States Patent and Trademark Office, or USPTO, to determine priority of invention. For a more comprehensive discussion of the risks related to our intellectual property, please see "Risk Factors—Risks Related to Intellectual Property."

The term of individual patents depends upon the legal term of the patents in the countries in which they are obtained. In most countries in which we file, the patent term is 20 years from the earliest date of filing a non-provisional patent application related to the patent. A U.S. patent also may be accorded a PTA under certain circumstances to compensate for delays in obtaining the patent from the USPTO. In some instances, such a PTA may result in a U.S. patent term extending beyond 20 years from the earliest date of filing a non-provisional patent application related to the U.S. patent. In addition, in the United States, the term of a U.S. patent that covers an FDA-approved drug may also be eligible for patent term extension, which permits patent term restoration as compensation for the patent term lost during the FDA regulatory review process. The Hatch-Waxman Act permits a patent term extension of up to five years beyond the expiration of the patent. The length of the patent term extension is related to the length of time the drug is under regulatory review. Patent term extension cannot extend the remaining term of a patent beyond a total of 14 years from the date of product approval and only one patent applicable to an approved drug may be extended. Similar provisions are available in Europe and other foreign jurisdictions to extend the term of a patent that covers an approved drug. In the future, if and when our products receive FDA approval, we expect to apply for patent term extensions on patents covering those products. We plan to seek patent term extensions to any of our issued patents in any jurisdiction where these are available, however there is no guarantee that the applicable authorities, including the FDA in the United States, will agree with our assessment of whether such extensions should be granted, and if granted, the length of such extensions.

We also rely on trade secrets relating to product candidates and seek to protect and maintain the confidentiality of proprietary information to protect aspects of our business that are not amenable to, or that we do not consider appropriate for, patent protection. Although we take steps to protect our proprietary information and trade secrets, including through contractual means with our employees and consultants, third parties may independently develop substantially equivalent proprietary information and techniques or otherwise gain access to our trade secrets, including through breaches of such agreements with our employees and consultants. Thus, we may not be able to meaningfully protect our trade secrets. It is our policy to require our employees, consultants, outside scientific partners, sponsored researchers and other advisors to execute confidentiality agreements upon the commencement of employment or consulting relationships with us. These agreements provide that all confidential information concerning our business or financial affairs developed or made known to the individual during the course of the individual's relationship with us is to be kept confidential and not disclosed to third parties except in specific circumstances. Our agreements with employees also provide that all inventions conceived by the employee in the course of employment with us or from the employee's use of our confidential information are our exclusive property.

Competition

The biotechnology and pharmaceutical industries are characterized by continuing technological advancement and significant competition. While we believe that our product candidates, technology, knowledge, experience and scientific resources provide us with competitive advantages, we face competition from major pharmaceutical and biotechnology companies, academic institutions, governmental agencies and public and private research institutions, among others. Any product candidates that we successfully develop and commercialize will compete with existing therapies and new therapies that may become available in the future. Key product features that would affect our ability to effectively compete with other therapeutics include the efficacy, safety and convenience of our products. The level of generic competition and the availability of reimbursement from government and other third-party payors will also significantly affect the pricing and competitiveness of our products. Our competitors also may obtain FDA or other regulatory approval for their products more rapidly than we may obtain approval for ours, which could result in our competitors establishing a strong market position before we are able to enter the market.

Many of the companies against which we may compete 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 competitors also compete with us in recruiting and retaining qualified scientific and management personnel and establishing clinical trial sites and patient registration for clinical trials, as well as in acquiring technologies complementary to, or necessary for, our programs.

Specifically, there are several companies marketing or developing treatments that may be approved for the same indications and/or diseases as our lead product candidate itolizumab (EQ001).

aGVHD

Corticosteroids, or steroids, remain the standard of care for the first-line treatment of aGVHD. There are currently no FDA-approved therapies indicated as a first-line treatment of aGVHD. Second-line therapy consists of off-label immunosuppressives for which the therapeutic benefit has not been established, and Incyte Corporation's ruxolitinib which was approved for the treatment of steroid refractory aGVHD during 2019.

In addition, we are aware of a number of companies with development programs in aGVHD, including Bristol-Myers Squibb Company, CSL Behring LLC, ElsaLys Biotech, Fate Therapeutics, Inc., Incyte Corporation, Takeda Pharmaceutical Company Limited, Jazz Pharmaceuticals plc, Kalytera Therapeutics, Inc., Kamada Ltd., Mesoblast Limited, and Xenikos B.V.

Lupus Nephritis

Standard of care induction treatment in patients with the most severe forms of lupus nephritis, called proliferative lupus nephritis or Class III or IV lupus nephritis, is typically IV methylprednisolone followed by oral prednisone with the addition of MMF or cyclophosphamide. Standard of care for maintenance therapy is typically a combination of corticosteroids and MMF or calcineurin inhibitors. There are currently two approved therapies for the treatment of lupus nephritis. One is GlaxoSmithKline's Benlysta, approved in 2020, and the other is Lupkynis (voclosporin), which was approved in January 2021 and is marketed by Aurinia Pharmaceuticals Inc.

We are aware of several companies with development programs targeting lupus nephritis including Alexion Pharmaceuticals, Inc, Apellis Pharmaceuticals, Inc., AstraZeneca plc, Aurinia Pharmaceuticals Inc., Boehringer Ingelheim GmbH, Genentech Inc., Novartis AG, GlaxoSmithKline plc, Kezar Life Sciences, Inc., Omeros Corporation, Bristol-Myers Squibb Company and Janssen Pharmaceuticals.

Asthma

Several biologic therapies that specifically target IgE or T_h2-mediated cytokines have been approved by the FDA for the treatment of asthma including products developed by AstraZeneca plc, GlaxoSmithKline plc, Sanofi-Genzyme, Novartis AG, Regeneron Pharmaceuticals, Inc., Roche Holding AG and Teva Pharmaceutical Industries Limited.

In addition, Regeneron Pharmaceuticals, Inc. and Sanofi-Aventis U.S. LLC have received approval for dupilimab, an anti-IL-4 receptor antibody, as an add-on maintenance treatment in patients with moderate to severe asthma aged 12 years and older with an eosinophilic phenotype or with oral corticosteroid dependent asthma.

We are also aware of several companies with development programs in this indication, including Amgen Inc., AstraZeneca plc, GlaxoSmithKline plc, Gossamer Bio, Inc., Novartis AG, Regeneron Pharmaceuticals, Inc., Roche Holding AG, and Sanofi-Aventis U.S. LLC.

Sales and Marketing

Given our stage of development, we have not yet established a commercial organization or distribution capabilities. We intend to build a commercial infrastructure to support sales of itolizumab (EQ001) in the United States. We expect to manage sales, marketing, patient access and distribution through internal resources and third-party relationships. While we may commit significant financial and management resources to commercial activities, we will also consider collaborating with one or more pharmaceutical companies to enhance our commercial capabilities.

Manufacturing

We do not own or operate manufacturing facilities for the production of itolizumab (EQ001) or any future product candidates, nor do we have plans to develop our own manufacturing operations in the foreseeable future. We currently rely on Biocon, our third-party contract manufacturer, pursuant to the Biocon License and Biocon Supply Agreement, for all our required raw materials, drug substance and drug product needs for preclinical research, clinical trials and commercial supply of itolizumab (EQ001). If itolizumab (EQ001) is approved, we have agreed to enter into a separate exclusive supply agreement with Biocon in the future. Biocon currently manufactures itolizumab (EQ001) at commercial scale at its FDA-regulated facility in Bangalore, India.

With respect to any future product candidates, we expect to rely on third-party contract manufacturers for all our required raw materials, drug substance and drug product needs for preclinical research, clinical trials and commercial supply.

Government Regulation and Product Approval

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 biologics such as those we are developing. We, along with third-party contractors, will be required to navigate the various preclinical, clinical and commercial approval requirements of the governing regulatory agencies of the countries in which we wish to conduct studies or seek approval or licensure of our product candidates.

In the United States, the FDA regulates biologics under both the Federal Food, Drug and Cosmetic Act, or FDCA, and the Public Health Services Act, or PHSA, and their implementing regulations. The process required by the FDA before biologic product candidates may be marketed in the United States generally involves the following:

- completion of preclinical laboratory tests and animal studies performed in accordance with the FDA's current Good Laboratory Practices, or GLP, regulations;
- submission to the FDA of an IND, which must become effective before clinical trials may begin and must be updated annually or when significant changes are made;
- approval by an independent Institutional Review Board, or IRB, or ethics committee at each clinical site before the trial is commenced;
- performance of adequate and well-controlled human clinical trials to establish the safety, purity and potency of the proposed biologic product candidate for its intended purpose;
- preparation of and submission to the FDA of a BLA after completion of all pivotal clinical trials that includes substantial evidence of safety, purity and potency from results of nonclinical testing and clinical trials;
- a determination by the FDA within 60 days of its receipt of a BLA to file the application for review;
- satisfactory completion of an FDA Advisory Committee review, if applicable;
- satisfactory completion of an FDA pre-approval inspection of the manufacturing facility or facilities at which the proposed product is produced to assess compliance with cGMP and to assure that the facilities, methods and controls are adequate to preserve the biological product's continued safety, purity and potency, and of selected clinical investigation sites to assess compliance with Good Clinical Practices, or GCP; and
- FDA review and approval, or licensure, of the BLA to permit commercial marketing of the product for particular indications for use in the United States.

Preclinical and Clinical Development

Prior to beginning the first clinical trial with a product candidate, we must submit an IND to the FDA. An IND is a request for authorization from the FDA to administer an investigational new drug product to humans. 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, PK, pharmacology, and PD characteristics of the product candidate; chemistry, manufacturing, and controls information; and any available human data or literature to support the use of the investigational product. An IND must become effective before human clinical trials may begin. The IND automatically becomes effective 30 days after receipt by the FDA, unless the FDA, within the 30-day time period, raises safety concerns or questions about the proposed clinical trial. In such a case, the IND may be placed on clinical hold and the IND sponsor and the FDA must resolve any outstanding concerns or questions before the clinical trial can begin. Submission of an IND therefore may or may not result in FDA authorization to begin a clinical trial.

Clinical trials involve the administration of the investigational product to human subjects under the supervision of qualified investigators in accordance with GCPs, which include the requirement that all research subjects provide their informed consent for their participation in any clinical study. Clinical trials are conducted under protocols detailing, among other things, the objectives of the study, the parameters to be used in monitoring safety and the effectiveness criteria to be evaluated. A separate submission to the existing IND must be made for each successive clinical trial conducted during product development and for any subsequent protocol amendments. Furthermore, an independent IRB for each site proposing to conduct the clinical trial must review and approve the plan for any clinical trial and its informed consent form before the clinical trial begins at that site, and must monitor the study until completed. Regulatory authorities, the IRB or the sponsor may suspend a clinical trial at any time on various grounds, including a finding that the subjects are being exposed to an unacceptable health risk or that the trial is

unlikely to meet its stated objectives. 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 halt the clinical trial if it determines that there is an unacceptable safety risk for subjects or other grounds, such as no demonstration of efficacy. There are also requirements governing the reporting of ongoing clinical studies and clinical study results to public registries.

For purposes of BLA approval, human clinical trials are typically conducted in three sequential phases that may overlap.

- Phase 1—The investigational product is initially introduced into healthy human subjects or patients with the target disease or condition. These studies are designed to test the safety, dosage tolerance, absorption, metabolism, distribution and elimination of the investigational product in humans, the side effects associated with increasing doses, and, if possible, to gain early evidence on effectiveness.
- Phase 2—The investigational product is administered 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—The investigational product is administered to an expanded patient population to further evaluate dosage, to provide statistically significant 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 product approval.

In some cases, the FDA may require, or companies may voluntarily pursue, additional clinical trials after a product is approved to gain more information about the product. These so-called Phase 4 studies may be made a condition to approval of the BLA. Concurrent with clinical trials, companies may complete additional animal studies and develop additional information about the biological characteristics of the product candidate, and must finalize a process for manufacturing the 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, among other things, must develop methods for testing the identity, strength, quality and purity of the final product, or for biologics, the safety, purity and potency. 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.

BLA Submission, Review and Approval

Assuming successful completion of all required testing in accordance with all applicable regulatory requirements, the results of product development, nonclinical studies and clinical trials are submitted to the FDA as part of a BLA requesting approval to market the product for one or more indications. The BLA must include all relevant data available from pertinent preclinical and clinical studies, including negative or ambiguous results as well as positive findings, together with detailed information relating to the product's chemistry, manufacturing, controls, and proposed labeling, among other things. The submission of a BLA requires payment of a substantial application user fee to FDA, unless a waiver or exemption applies.

Once a BLA has been submitted, the FDA's goal is to review standard applications within ten months after it accepts the application for filing, or, if the application qualifies for priority review, six months after the FDA accepts the application for filing. In both standard and priority reviews, the review process is often significantly extended by FDA requests for additional information or clarification. The FDA reviews a BLA to determine, among other things, whether a product is safe, pure and potent and the facility in which it is manufactured, processed, packed, or held meets standards designed to assure the product's continued safety, purity and potency. The FDA may convene an advisory committee to provide clinical insight on application review questions. Before approving a BLA, the FDA will typically 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 a BLA, the FDA will typically inspect one or more clinical sites to assure compliance with GCP. If the FDA determines that the application, manufacturing process or manufacturing facilities are not acceptable, it will outline the deficiencies in the submission and often will request additional testing or information. Notwithstanding the submission of any requested additional information, the FDA ultimately may decide that the application does not satisfy the regulatory criteria for approval.

After the FDA evaluates a BLA and conducts inspections of manufacturing facilities where the investigational product and/or its drug substance will be produced, the FDA may issue an approval letter or a Complete Response letter. An approval letter authorizes commercial marketing of the product with specific prescribing information for specific indications. A Complete

Response letter will describe all of the deficiencies that the FDA has identified in the 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 BLA in condition for approval, including requests for additional information or clarification. The FDA may delay or refuse approval of a BLA if applicable regulatory criteria are not satisfied, require additional testing or information and/or require post-marketing testing and surveillance to monitor safety or efficacy of a product.

If regulatory approval of a product is granted, such approval will be granted for particular indications and may entail limitations on the indicated uses for which such product may be marketed. For example, the FDA may approve the BLA with a Risk Evaluation and Mitigation Strategy, or REMS, to ensure the benefits of the product outweigh its risks. A REMS is a safety strategy to manage a known or potential serious risk associated with a product and to enable patients to have continued access to such medicines by managing their safe use, and could include medication guides, physician communication plans, or elements to assure safe use, such as restricted distribution methods, patient registries and other risk minimization tools. The FDA also may condition approval on, among other things, changes to proposed labeling or the development of adequate controls and specifications. Once approved, the FDA may withdraw the product approval if compliance with pre- and post-marketing requirements is not maintained or if problems occur after the product reaches the marketplace. The FDA may require one or more Phase 4 post-market studies and surveillance to further assess and monitor the product's safety and effectiveness after commercialization, and may limit further marketing of the product based on the results of these post-marketing studies.

Expedited Development and Review Programs

Any marketing application for a biologic submitted to the FDA for approval may be eligible for FDA programs intended to expedite the FDA review and approval process, such as priority review, fast track designation, breakthrough therapy and accelerated approval.

A product is eligible for priority review if it has the potential to provide safe and effective therapy where no satisfactory alternative therapy exists or to provide a significant improvement in the treatment, diagnosis or prevention of a serious disease or condition compared to marketed products. For products containing new molecular entities, 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).

To be eligible for a fast track designation, the FDA must determine, based on the request of a sponsor, that a product is intended to treat a serious or life-threatening disease or condition and demonstrates the potential to address an unmet medical need by providing a therapy where none exists or a therapy that may be potentially superior to existing therapy based on efficacy or safety factors. Fast track designation provides opportunities for frequent interactions with the FDA review team to expedite development and review of the product. The FDA may also review sections of the BLA for a fast track product on a rolling basis before the complete application is submitted, if the sponsor and FDA agree on a schedule for the submission of the application sections, and the sponsor pays any required user fees upon submission of the first section of the BLA.

In addition, a sponsor can request designation of a product candidate as a "breakthrough therapy." A breakthrough therapy is defined as a drug or biologic that is intended, alone or in combination with one or more other drugs or biologics, to treat a serious or life-threatening disease or condition, and preliminary clinical evidence indicates that the drug or biologic may demonstrate substantial improvement over existing therapies on one or more clinically significant endpoints, such as substantial treatment effects observed early in clinical development. Drugs or biologics designated as breakthrough therapies are also eligible for accelerated approval. The FDA must take certain actions, such as holding timely meetings and providing advice, intended to expedite the development and review of an application for approval of a breakthrough therapy.

Additionally, products studied for their safety and effectiveness in treating serious or life-threatening diseases or conditions may receive accelerated approval upon a determination that the product has 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, that is reasonably likely to predict an effect on irreversible morbidity or mortality or other clinical benefit, taking into account the severity, rarity, or prevalence of the condition and the availability or lack of alternative treatments. As a condition of accelerated approval, the FDA will generally require the sponsor to perform adequate and well-controlled post-marketing clinical studies to verify and describe the anticipated effect on irreversible morbidity or mortality or other clinical benefit. In addition, the FDA currently requires as a condition for accelerated approval pre-approval of promotional materials, which could adversely impact the timing of the commercial launch of the product.

Even if a product qualifies for one or more of these programs, the FDA may later decide that the product no longer meets the conditions for qualification or decide that the time period for FDA review and approval will not be shortened. Furthermore,

priority review, fast track designation, breakthrough therapy designation, and accelerated approval do not change the standards for approval but may expedite the development or approval process.

Orphan Drug Designation

Under the Orphan Drug Act, the FDA may grant orphan designation to a drug or biologic intended to treat a rare disease or condition, which is a disease or condition that affects fewer than 200,000 individuals in the United States, or more than 200,000 individuals in the United States for which there is no reasonable expectation that the cost of developing and making available in the United States a drug or biologic for this type of disease or condition will be recovered from sales in the United States for that drug or biologic. Orphan designation must be requested before submitting a BLA. After the FDA grants orphan designation, the generic identity of the therapeutic agent and its potential orphan use are disclosed publicly by the FDA. The orphan drug designation does not convey any advantage in, or shorten the duration of, the regulatory review or approval process.

If a product that has orphan designation subsequently receives the first FDA approval for the disease for which it has such designation, the product is entitled to orphan exclusivity, which means that the FDA may not approve any other applications, including a full BLA, to market the same product for the same indication for seven years, except in limited circumstances, such as a showing of clinical superiority to the product with orphan drug exclusivity. Orphan exclusivity does not prevent 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 orphan drug designation are tax credits for certain research and a waiver of the BLA application fee.

A designated orphan product may not receive orphan exclusivity if it is approved for a use that is broader than the indication for which it received orphan designation. In addition, 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.

Post-Approval Requirements

Any products manufactured or distributed by us pursuant to FDA approvals are subject to pervasive and continuing regulation by the FDA, including, among other things, requirements relating to quality control and quality assurance, record-keeping, reporting of adverse experiences, periodic reporting, product sampling and distribution, and advertising and promotion of the product. After approval, most changes to the approved product, such as adding new indications or other labeling claims, are subject to prior FDA review and approval. There also are continuing user fee requirements, under which FDA assesses an annual program fee for each product identified in an approved BLA. Biologic manufacturers and their subcontractors 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 cGMP, which impose certain procedural and documentation requirements upon us and our third-party manufacturers. 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. 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.

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 AEs 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; imposition of post-market studies or clinical studies to assess new safety risks; or imposition of distribution restrictions or other restrictions under a REMS program. Other potential consequences include, among other things:

- restrictions on the marketing or manufacturing of a product, mandated modification of promotional materials or issuance of corrective information, issuance by FDA or other regulatory authorities of safety alerts, Dear Healthcare Provider letters, press releases or other communications containing warnings or other safety information about the product, or complete withdrawal of the product from the market or product recalls;
- fines, warning or untitled letters or holds on post-approval clinical studies;
- refusal of the FDA to approve pending applications or supplements to approved applications, or suspension or revocation of existing product approvals;
- product seizure or detention, or refusal of the FDA to permit the import or export of products; or

- injunctions, consent decrees or the imposition of civil or criminal penalties.

The FDA closely regulates the marketing, labeling, advertising and promotion of biologics. A company can make only those claims relating to safety and efficacy, purity and potency that are approved by the FDA and in accordance with the provisions of the approved label. However, companies may share truthful and not misleading information that is otherwise consistent with the product's FDA approved labeling. The FDA and other agencies actively enforce the laws and regulations prohibiting the promotion of off-label uses. Failure to comply with these requirements can result in, among other things, adverse publicity, warning letters, corrective advertising and potential civil and criminal penalties. Physicians may prescribe legally available products for uses that are not described in the product's labeling and that differ from those tested by us and approved by the FDA. Such off-label uses are common across medical specialties. Physicians may believe that such off-label uses are the best treatment for many patients in varied circumstances. The FDA does not regulate the behavior of physicians in their choice of treatments. The FDA does, however, restrict manufacturer's communications on the subject of off-label use of their products.

Regulation of Diagnostic Tests

The co-development and validation of a diagnostic marker related to the CD6-ALCAM pathway and other urinary biomarkers for a companion diagnostic to identify lupus nephritis patients most likely to respond to itolizumab (EQ001) will subject us and any diagnostic collaborator to device regulations of the FDA. Unless an exemption applies, diagnostic tests require marketing clearance or approval from the FDA prior to commercial distribution. The two primary types of FDA marketing authorization applicable to a medical device are premarket notification, also called 510(k) clearance, and premarket approval, or PMA approval. We expect that any companion diagnostic developed for itolizumab (EQ001) will utilize the PMA pathway.

PMA applications must be supported by valid scientific evidence, which typically requires extensive data, including technical, preclinical, clinical and manufacturing data, to demonstrate to the FDA's satisfaction the safety and effectiveness of the device. For diagnostic tests, a PMA application typically includes data regarding analytical and clinical validation studies. As part of its review of the PMA, the FDA will conduct a pre-approval inspection of the manufacturing facility or facilities to ensure compliance with the Quality System Regulation, which requires manufacturers to follow design, testing, control, documentation and other quality assurance procedures. On August 6, 2014, the FDA issued a final guidance document addressing the development and approval process for "In Vitro Companion Diagnostic Devices." According to the guidance, a companion diagnostic device and its corresponding drug should be approved or cleared contemporaneously by the FDA for the use indicated in the therapeutic product labeling.

Biosimilars and Reference Product Exclusivity

The Patient Protection and Affordable Care Act, as amended by the Health Care and Education Reconciliation Act, or collectively, the ACA, signed into law in 2010, includes the BPCIA, which created an abbreviated approval pathway for biological products that are biosimilar to or interchangeable with an FDA-approved reference biological product. To date, a number of biosimilars have been licensed under the BPCIA, and numerous biosimilars have been approved in Europe. The FDA has issued several guidance documents outlining its approach to the review and approval of biosimilars.

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. Complexities associated with the larger, and often more complex, structures of biological products, as well as the processes by which such products are manufactured, pose significant hurdles to implementation of the abbreviated approval pathway that are still being worked out by the FDA.

Under the BPCIA, 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.

The BPCIA is complex and continues to be interpreted and implemented by the FDA. In addition, recent government proposals have sought to reduce the 12-year reference product exclusivity period. Other aspects of the BPCIA, some of which may impact

the BPCIA exclusivity provisions, have also been the subject of recent litigation. As a result, the ultimate impact, implementation, and impact of the BPCIA is subject to significant uncertainty.

Other U.S. Healthcare Laws and Compliance Requirements

In the United States, our current and future operations are subject to regulation by various federal, state and local authorities in addition to the FDA, including but not limited to, the Centers for Medicare & Medicaid Services, or CMS, other divisions of the U.S. Department of Health and Human Services, or HHS (such as the Office of Inspector General, Office for Civil Rights and the Health Resources and Service Administration), the U.S. Department of Justice, or DOJ, and individual U.S. Attorney offices within the DOJ, and state and local governments. For example, our clinical research, sales, marketing and scientific/educational grant programs may have to comply with the anti-fraud and abuse provisions of the Social Security Act, the false claims laws, the privacy and security provisions of the Health Insurance Portability and Accountability Act, or HIPAA, and similar state laws, each as amended, as applicable.

The federal Anti-Kickback Statute prohibits, among other things, any person or entity, from knowingly and willfully offering, paying, soliciting or receiving any remuneration, directly or indirectly, overtly or covertly, in cash or in kind, to induce or in return for purchasing, leasing, ordering or arranging for the purchase, lease or order of any item or service reimbursable, in whole or in part, under Medicare, Medicaid or other federal healthcare programs. The term remuneration has been interpreted broadly to include anything of value. The federal Anti-Kickback Statute has been interpreted to apply to arrangements between therapeutic product manufacturers on 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. The exceptions and safe harbors are drawn narrowly and practices that involve remuneration that may be alleged to be intended to induce prescribing, purchasing or recommending may be subject to scrutiny if they do not qualify for an exception or safe harbor. Failure to meet all of the requirements of a particular applicable statutory exception or regulatory safe harbor does not make the conduct per se illegal under the federal Anti-Kickback Statute. Instead, the legality of the arrangement will be evaluated on a case-by-case basis based on a cumulative review of all of its facts and circumstances. Our practices may not in all cases meet all of the criteria for protection under a statutory exception or regulatory safe harbor.

Additionally, the intent standard under the federal Anti-Kickback Statute was amended by the Patient Protection and Affordable Care Act, as amended by the Health Care and Education Reconciliation Act of 2010, or Affordable Care Act, to a stricter standard such that a person or entity no longer needs to have actual knowledge of the statute or specific intent to violate it in order to have committed a violation. In addition, the Affordable Care Act codified case law 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 federal False Claims Act, or FCA (discussed below).

The federal false claims, including the FCA, and civil monetary penalty laws, which can be enforced by private citizens, on behalf of the government, through civil qui tam actions, prohibit any person or entity from, among other things, knowingly presenting, or causing to be presented, a false or fraudulent claim for payment to, or approval by, the federal government, including federal healthcare programs, such as Medicare and Medicaid, knowingly making, using, or causing to be made or used a false record or statement material to a false or fraudulent claim to the federal government, or knowingly making a false statement to improperly avoid, decrease or conceal an obligation to pay money to the federal government. A claim includes “any request or demand” for money or property presented to the U.S. government. For instance, historically, pharmaceutical and other healthcare companies have been prosecuted under these laws for allegedly providing free product to customers with the expectation that the customers would bill federal programs for the product. Other companies have been prosecuted for causing false claims to be submitted because of the companies’ marketing of the product for unapproved, off-label, and thus generally non-reimbursable, uses.

HIPAA created additional federal civil and criminal statutes that prohibit, among other things, knowingly and willfully executing, or attempting to execute, a scheme to defraud or to obtain, by means of false or fraudulent pretenses, representations or promises, any money or property owned by, or under the control or custody of, any healthcare benefit program, including private third-party payors, willfully obstructing a criminal investigation of a healthcare offense, and knowingly and willfully falsifying, concealing or covering up by trick, scheme or device, a material fact or making any materially false, fictitious or fraudulent statement in connection with the delivery of or payment for healthcare benefits, items or services. Like the federal Anti-Kickback Statute, the Affordable Care Act amended the intent standard for certain healthcare fraud statutes under HIPAA such that a person or entity no longer needs to have actual knowledge of the statute or specific intent to violate it in order to have committed a violation.

Also, many states have similar, and typically more prohibitive, fraud and abuse statutes or regulations that apply to items and services reimbursed under Medicaid and other state programs, or, in several states, apply regardless of the payor.

We may be subject to data privacy and security regulations by both the federal government and the states in which we conduct our business. HIPAA, as amended by the Health Information Technology for Economic and Clinical Health Act, or HITECH, and their implementing regulations, imposes requirements relating to the privacy, security and transmission of individually identifiable health information. Among other things, HITECH makes HIPAA's privacy and security standards directly applicable to business associates, independent contractors, or agents of covered entities, which include certain healthcare providers, health plans and healthcare clearinghouses, that receive or obtain protected health information in connection with providing a service on behalf of a covered entity. HITECH also created four 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 HIPAA and seek attorneys' fees and costs associated with pursuing federal civil actions. In addition, many state laws govern the privacy and security of health information in specified circumstances, many of which differ from each other in significant ways, are often not pre-empted by HIPAA, and may have a more prohibitive effect than HIPAA, thus complicating compliance efforts.

We may develop products that, once approved, may be administered by a physician. Under currently applicable U.S. law, certain products not usually self-administered (including injectable drugs) may be eligible for coverage under Medicare through Medicare Part B. Medicare Part B is part of original Medicare, the federal health care program that provides health care benefits to the aged and disabled, and covers outpatient services and supplies, including certain biopharmaceutical products, that are medically necessary to treat a beneficiary's health condition. As a condition of receiving Medicare Part B reimbursement for a manufacturer's eligible drugs, the manufacturer is required to participate in other government healthcare programs, including the Medicaid Drug Rebate Program and the 340B Drug Pricing Program. The Medicaid Drug Rebate Program requires pharmaceutical manufacturers to enter into and have in effect a national rebate agreement with the Secretary of HHS as a condition for states to receive federal matching funds for the manufacturer's outpatient drugs furnished to Medicaid patients. Under the 340B Drug Pricing Program, the manufacturer must extend discounts to entities that participate in the program.

In addition, many pharmaceutical manufacturers must calculate and report certain price reporting metrics to the government, such as average sales price, or 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 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.

Additionally, the federal Physician Payments Sunshine Act, or the Sunshine Act, within the Affordable Care Act, and its implementing regulations, require that certain manufacturers of drugs, devices, biological and medical supplies for which payment is available under Medicare, Medicaid or the Children's Health Insurance Program (with certain exceptions) report annually to CMS information related to certain payments or other transfers of value made or distributed to physicians, as defined by such law, and teaching hospitals, or to entities or individuals at the request of, or designated on behalf of, the physicians and teaching hospitals and to report annually certain ownership and investment interests held by physicians and their immediate family members. Beginning in 2022, applicable manufacturers also will be required to report such information regarding its relationships with physician assistants, nurse practitioners, clinical nurse specialists, anesthesiologist assistants, certified registered nurse anesthetists and certified nurse midwives during the previous year. Failure to report accurately could result in penalties. In addition, many states also govern the reporting of payments or other transfers of value, many of which differ from each other in significant ways, are often not pre-empted, and may have a more prohibitive effect than the Sunshine Act, thus further complicating compliance efforts.

In order to distribute products commercially, we must comply with state laws that require the registration of manufacturers and wholesale distributors of drug and biological products in a state, including, in certain states, manufacturers and distributors who ship products into the state even if such manufacturers or distributors have no place of business within the state. Some states also impose requirements on manufacturers and distributors to establish the pedigree of product in the chain of distribution, including some states that require manufacturers and others to adopt new technology capable of tracking and tracing product as it moves through the distribution chain. Several states have enacted legislation requiring pharmaceutical and biotechnology companies to establish marketing compliance programs, file periodic reports with the state, make periodic public disclosures on sales, marketing, pricing, clinical trials and other activities, and/or register their sales and medical representatives, as well as to prohibit pharmacies and other healthcare entities from providing certain physician prescribing data to pharmaceutical and biotechnology companies for use in sales and marketing, and to prohibit certain other sales and marketing practices. All of our activities are potentially subject to federal and state consumer protection and unfair competition laws.

Ensuring business arrangements with third parties comply with applicable healthcare laws and regulations is a costly endeavor. If our operations are found to be in violation of any of the federal and state healthcare laws described above or any other current or future governmental regulations that apply to us, we may be subject to significant penalties, including without limitation, civil, criminal and/or administrative penalties, damages, fines, disgorgement, imprisonment, exclusion from participation in

government programs, such as Medicare and Medicaid, injunctions, private "qui tam" actions brought by individual whistleblowers in the name of the government, or refusal to allow us to enter into government contracts, contractual damages, reputational harm, administrative burdens, diminished profits and future earnings, 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, 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.

Coverage, Pricing and Reimbursement

Significant uncertainty exists as to the coverage and reimbursement status of any product candidates for which we may obtain regulatory approval. In the United States and in foreign markets, sales of any products for which we receive regulatory approval for commercial sale will depend, in part, on the extent to which third-party payors provide coverage and establish adequate reimbursement levels for such products. In the United States, third-party payors include federal and state healthcare programs, private managed care providers, health insurers and other organizations. Coverage and adequate reimbursement from governmental healthcare programs, such as Medicare & Medicaid in the United States, and commercial payors are critical to new product acceptance.

Our ability to commercialize any products successfully also will depend in part on the extent to which coverage and reimbursement for these products and related treatments will be available from government health administration authorities, private health insurers and other organizations. Government authorities and other third-party payors, such as private health insurers and health maintenance organizations, decide which therapeutics they will pay for and establish reimbursement levels. Coverage and reimbursement by a third-party payor may depend upon a number of factors, including the third-party payor's determination that use of a therapeutic 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.

We cannot be sure that reimbursement will be available for any product that we commercialize and, if coverage and reimbursement are available, what the level of reimbursement will be. Coverage may also be more limited than the purposes for which the product is approved by the FDA or comparable foreign regulatory authorities. Reimbursement may impact the demand for, or the price of, any product for which we obtain regulatory approval.

Third-party payors are increasingly challenging the price, examining the medical necessity, and reviewing the cost-effectiveness of medical products, therapies and services, in addition to questioning their safety and efficacy. Obtaining reimbursement for our products may be particularly difficult because of the higher prices often associated with branded drugs and drugs administered under the supervision of a physician. We may need to conduct expensive pharmacoeconomic studies in order to demonstrate the medical necessity and cost-effectiveness of our products, in addition to the costs required to obtain FDA approvals. Our product candidates may not be considered medically necessary or cost-effective. Obtaining coverage and reimbursement approval of a product from a government or other third-party payor is a time-consuming and costly process that could require us to provide to each payor supporting scientific, clinical and cost-effectiveness data for the use of our product on a payor-by-payor basis, with no assurance that coverage and adequate reimbursement will be obtained. A third-party payor's decision to provide coverage for a product does not imply that an adequate reimbursement rate will be approved. Further, one third-party payor's determination to provide coverage for a product does not assure that other payors will also provide coverage for the product. Adequate third-party reimbursement may not be available to enable us to maintain price levels sufficient to realize an appropriate return on our investment in product development. If reimbursement is not available or is available only at limited levels, we may not be able to successfully commercialize any product candidate that we successfully develop. Additionally, we may develop companion diagnostic tests for use with our product candidates. Companion diagnostic tests require coverage and reimbursement separate and apart from the coverage and reimbursement for their companion pharmaceutical or biological products. Similar challenges to obtaining coverage and reimbursement, applicable to pharmaceutical products, will apply to companion diagnostics.

Different pricing and reimbursement schemes exist in other countries. In the European Union, governments influence the price of biopharmaceutical products through their pricing and reimbursement rules and control of national health care systems that fund a large part of the cost of those products to consumers. Some jurisdictions operate positive and negative list systems under

which products may only be marketed once a reimbursement price has been agreed. To obtain reimbursement or pricing approval, some of these countries may require the completion of clinical trials that compare the cost effectiveness of a particular product candidate to currently available therapies. Other member states allow companies to fix their own prices for medicines but monitor and control company profits. The downward pressure on health care costs has become intense. As a result, increasingly high barriers are being erected to the entry of new products. In addition, in some countries, cross-border imports from low-priced markets exert a commercial pressure on pricing within a country.

The marketability of any product candidates for which we receive regulatory approval for commercial sale may suffer if government and third-party payors fail to provide coverage and adequate reimbursement. In addition, emphasis on managed care, the increasing influence of health maintenance organizations, and additional legislative changes in the United States has increased, and we expect will continue to increase, the pressure on healthcare pricing. The downward pressure on the rise in healthcare costs in general, particularly prescription medicines, medical devices and surgical procedures and other treatments, has become very intense. Coverage policies and third-party payor reimbursement rates may change at any time. Even if favorable coverage and reimbursement status is attained for one or more products for which we receive regulatory approval, less favorable coverage policies and reimbursement rates may be implemented in the future.

Healthcare Reform

In the United States and some foreign jurisdictions, there have been, and continue to be, several legislative and regulatory changes and proposed changes regarding the healthcare system that could prevent or delay marketing approval of product candidates, restrict or regulate post-approval activities, and affect the ability to profitably sell product candidates for which marketing approval is obtained. Among policy makers and payors in the United States and elsewhere, there is significant interest in promoting changes in healthcare systems with the stated goals of containing healthcare costs, improving quality and/or expanding access. In the United States, the pharmaceutical industry has been a particular focus of these efforts and has been significantly affected by major legislative initiatives.

For example, the Affordable Care Act has substantially changed healthcare financing and delivery by both governmental and private insurers. Among the Affordable Care Act provisions of importance to the pharmaceutical and biotechnology industries, in addition to those otherwise described above, are the following:

- an annual, nondeductible fee on any entity that manufactures or imports certain specified branded prescription drugs and biologic agents apportioned among these entities according to their market share in some government healthcare programs;
- an increase in the statutory minimum rebates a manufacturer must pay under the Medicaid Drug Rebate Program to 23.1% and 13% of the average manufacturer price for most branded and generic drugs, respectively, and capped the total rebate amount for innovator drugs at 100% of the Average Manufacturer Price, or AMP;
- a new Medicare Part D coverage gap discount program, in which manufacturers must now 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 for the manufacturers' outpatient drugs to be covered under Medicare Part D;
- extension of manufacturers' Medicaid rebate liability to covered drugs dispensed to individuals who are enrolled in Medicaid managed care organizations;
- expansion of eligibility criteria for Medicaid programs by, among other things, allowing states to offer Medicaid coverage to additional individuals and by adding new mandatory eligibility categories for individuals with income at or below 133% of the federal poverty level, thereby potentially increasing manufacturers' Medicaid rebate liability;
- expansion of the entities eligible for discounts under the 340B Drug Discount Program;
- a new Patient-Centered Outcomes Research Institute to oversee, identify priorities in, and conduct comparative clinical effectiveness research, along with funding for such research;
- expansion of healthcare fraud and abuse laws, including the FCA and the federal Anti-Kickback Statute, new government investigative powers, and enhanced penalties for noncompliance;
- 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;
- requirements to report certain financial arrangements with physicians and teaching hospitals;

- a requirement to annually report certain information regarding drug samples that manufacturers and distributors provide to physicians;
- establishment of a Center for Medicare & Medicaid Innovation at CMS to test innovative payment and service delivery models to lower Medicare & Medicaid spending; and
- a licensure framework for follow on biologic products.

There remain legal and political challenges to certain aspects of the Affordable Care Act. Since January 2017, the Trump administration signed several executive orders and other directives designed to delay, circumvent, or loosen certain requirements mandated by the Affordable Care Act. In December 2017, Congress repealed the tax penalty for an individual's failure to maintain Affordable Care Act-mandated health insurance as part of a tax reform bill. Further, the 2020 federal spending package permanently eliminated, effective January 1, 2020, the Affordable Care Act-mandated "Cadillac" tax on high-cost employer-sponsored health coverage and medical device tax and, effective January 1, 2021, also eliminated the health insurer tax. On December 14, 2018, a U.S. District Court Judge in the Northern District of Texas ruled that the individual mandate is a critical and inseverable feature of the Affordable Care Act, and therefore, because it was repealed as part of the tax reform bill, the remaining provisions of the Affordable Care Act are invalid as well. Additionally, on December 18, 2019, the U.S. Court of Appeals for the 5th Circuit upheld the District Court ruling that the individual mandate was unconstitutional and remanded the case back to the District Court to determine whether the remaining provisions of the Affordable Care Act are invalid as well. The U.S. Supreme Court is currently reviewing this case, although it is unclear when a decision will be made. Although the U.S. Supreme Court has yet ruled on the constitutionality of the ACA, on January 28, 2021, President Biden issued an executive order to initiate a special enrollment period from February 15, 2021 through May 15, 2021 for purposes of obtaining health insurance coverage through the Affordable Care Act marketplace. The executive order also instructs 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 Affordable Care Act. It is unclear how the Supreme Court ruling, other such litigation, and the healthcare reform measures of the Biden administration will impact the ACA and our business.

We anticipate that the Affordable Care Act, if substantially maintained in its current form, will continue to result in additional downward pressure on coverage and the price that we receive for any approved product, and could seriously harm our business. Any reduction in reimbursement from Medicare and 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. Such reforms could have an adverse effect on anticipated revenue from product candidates that we may successfully develop and for which we may obtain regulatory approval and may affect our overall financial condition and ability to develop product candidates.

Further legislation or regulation could be passed that could harm our business, financial condition and results of operations. Other legislative changes have been proposed and adopted since the Affordable Care Act was enacted. For example, in August 2011, President Obama signed into law the Budget Control Act of 2011, which, among other things, created the Joint Select Committee on Deficit Reduction to recommend to Congress proposals in spending reductions. The Joint Select Committee on Deficit Reduction did not achieve a targeted deficit reduction of at least $1.2 trillion for fiscal years 2012 through 2021, triggering the legislation's automatic reduction to several government programs. This includes aggregate reductions to Medicare payments to providers of up to 2% per fiscal year, which went into effect beginning on April 1, 2013 and will stay in effect through 2030 unless additional Congressional action is taken. However, COVID-19 pandemic relief legislation has suspended the 2% Medicare sequester from May 1, 2020 through March 31, 2021. In January 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, including hospitals, imaging centers and cancer treatment centers, and increased the statute of limitations period for the government to recover overpayments to providers from three to five years.

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. Congressional inquiries and proposed federal 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, the Trump administration's budget proposal for fiscal year 2021 includes a $135 billion allowance to support legislative proposals seeking to reduce drug prices, increase competition, lower out-of-pocket drug costs for patients, and increase patient access to lower-cost generic and biosimilar drugs. Further, the Trump administration previously released a "Blueprint," or plan, to lower drug prices and reduce out of pocket costs of drugs that contains additional proposals to increase drug manufacturer competition, increase the negotiating power of certain federal healthcare programs, incentivize manufacturers to lower the list price of their products, and reduce the out of pocket costs of drug products paid by

consumers. Several final rules have been recently promulgated that seek to implement several of the Trump administration's proposals. However, it is unclear whether the Biden administration will work to reverse these measures or pursue similar policy initiatives. Individual states in the United States have also become increasingly active in passing legislation and implementing regulations designed to control biopharmaceutical 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. Further, it is possible that additional government action is taken in response to the COVID-19 pandemic.

The Foreign Corrupt Practices Act

The Foreign Corrupt Practices Act, or FCPA, prohibits any U.S. individual or business from paying, offering, or authorizing payment or offering of anything of value, directly or indirectly, to any foreign official, political party or candidate for the purpose of influencing any act or decision of the foreign entity in order to assist the individual or business in obtaining or retaining business. The FCPA also obligates companies whose securities are listed in the United States to comply with accounting provisions requiring us to maintain books and records that accurately and fairly reflect all transactions of the corporation, including international subsidiaries, and to devise and maintain an adequate system of internal accounting controls for international operations.

Additional Regulation

In addition to the foregoing, state and federal laws regarding environmental protection and hazardous substances, including the Occupational Safety and Health Act, the Resource Conservancy and Recovery Act and the Toxic Substances Control Act, affect our business. These and other laws govern our use, handling and disposal of various biological, chemical and radioactive substances used in, and wastes generated by, our operations. If our operations result in contamination of the environment or expose individuals to hazardous substances, we could be liable for damages and governmental fines. We believe that we are in material compliance with applicable environmental laws and that continued compliance therewith will not have a material adverse effect on our business. We cannot predict, however, how changes in these laws may affect our future operations.

Government Regulations Related to Economic Sanctions

Pursuant to various laws, regulations, and executive orders, the U.S. Treasury Department's Office of Foreign Assets Control, or OFAC, administers and enforces economic and trade sanctions that prohibit or restrict certain activities with embargoed countries, sanctioned entities, and sanctioned individuals for particular foreign policy and national security reasons. The scope of the sanctions varies significantly, but may include comprehensive restrictions on imports, exports, investment, and facilitation of foreign transactions involving a sanctioned jurisdiction, entity or person, as well as non-sanctioned persons and entities acting on behalf of sanctioned jurisdictions, entities or people.

One such set of regulations is the Cuban Assets Control Regulations, or CACR. The CACR prohibits U.S. persons from engaging in virtually all transactions involving property of the government of Cuba or Cuban nationals, or property in which the government of Cuba or any Cuban national has at any time on or since July 8, 1963 had any interest of any nature whatsoever, direct or indirect. Where activity is prohibited by the CACR, engagement in such activity must be authorized by a general or specific license granted by OFAC. The antibody sequence for both itolizumab (EQ001) and ALZUMAb was developed exclusively by Cuban nationals. We currently rely on a general license in the CACR, relating to Cuban-origin pharmaceuticals, to import and conduct clinical trials relating to itolizumab (EQ001).

In November 2019, OFAC notified us that after careful consideration, which included consultation with the FDA, OFAC determined that itolizumab falls within the definition of "Cuban-origin pharmaceutical" and, as such, the general licenses at section 515.547(b) and (c) of the CACR authorize the conduct of clinical trials for itolizumab for the purpose of seeking approval for the drug from the FDA. Thus, no further authorization is required from OFAC at this time for our ongoing and planned clinical trials of itolizumab.

Other Regulations

We are also subject to numerous federal, state and local laws relating to such matters as safe working conditions, manufacturing practices, environmental protection, fire hazard control, and disposal of hazardous or potentially hazardous substances. We may incur significant costs to comply with such laws and regulations now or in the future.

Employees

As of December 31, 2020, we employed 31 employees, all of whom were full-time and engaged in research and development activities, operations, finance, business development and administration.

Corporate Information

We were originally incorporated as Attenuate Biopharmaceuticals, Inc. in Delaware in March 2017 and subsequently changed our name to Equillium, Inc. in May 2017. Our principal executive offices are located at 2223 Avenida de la Playa, Suite 105, La Jolla, CA 92037. Our telephone number is (858) 412-5302. Our website address is www.equilliumbio.com. Our website and the information contained on, or that can be accessed through, the website will not be deemed to be incorporated by reference in, and are not considered part of, this Annual Report on Form 10-K. Our Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K and amendments to such reports filed or furnished pursuant to Section 13(a) and 15(d) of the Securities Exchange Act of 1934, as amended, or the Exchange Act, are available free of charge on our website as soon as reasonably practical after we electronically file such material with, or furnish it to, the SEC.

All brand names or trademarks appearing in this Annual Report on Form 10-K are the property of their respective holders. Use or display by us of other parties' trademarks, trade dress, or products in this Annual Report on Form 10-K is not intended to, and does not, imply a relationship with, or endorsements or sponsorship of, us by the trademark or trade dress owners.

We are an "emerging growth company" as defined in the JOBS Act. 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 our initial public offering (i.e. December 31, 2023), (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 means the market value of our common stock that is held by non-affiliates exceeds $700 million as of the prior June 30th and (2) the date on which we have issued more than $1.0 billion in non-convertible debt during the prior three-year period.

Item 1A. Risk Factors.

RISK FACTORS SUMMARY

We face many risks and uncertainties, as more fully described in this section under the heading "Risk Factors." Some of these risks and uncertainties are summarized below. The summary below does not contain all of the information that may be important to you, and you should read this summary together with the more detailed discussion of these risks and uncertainties contained in "Risk Factors."

- We have a very limited operating history and have never generated any revenues;
- We expect to incur significant losses for the foreseeable future and may never achieve or maintain profitability;
- We will require substantial additional funding to complete the development and any commercialization of itolizumab (EQ001). If we are unable to raise this capital when needed, we may be forced to delay, reduce or eliminate our research and development programs or other operations;
- Raising additional capital may cause dilution to our stockholders, restrict our operations or require us to relinquish rights to our technologies or product candidates;
- We are highly dependent on the success of our product candidate, itolizumab (EQ001), which is in early stage clinical development, and we may not be able to successfully obtain regulatory or marketing approval for, or successfully commercialize, this product candidate in any of the indications for which we plan to develop it;
- Any delays in the commencement or completion, or termination or suspension, of our ongoing, planned or future clinical trials could result in increased costs to us, delay or limit our ability to raise capital or generate revenue and adversely affect our commercial prospects;
- Interim, topline or preliminary data from our clinical trials that we announce or publish from time to time may change as more patient data become available and are subject to audit and verification procedures that could result in material changes in the final data;
- We have licensed itolizumab from Biocon pursuant to an exclusive license agreement, which license is conditioned upon us meeting certain diligence obligations with respect to the development, regulatory approval and commercialization of itolizumab, and making significant milestone payments in connection with regulatory approval and commercial milestones as well as royalty payments;
- We have licensed the rights to itolizumab in the United States, Canada, Australia, and New Zealand. Any adverse developments that occur during any clinical trials conducted by Biocon or third parties in other jurisdictions may affect our ability to obtain regulatory approval or commercialize itolizumab;
- The manufacture of biologics is complex and Biocon, our third-party manufacturer, may encounter difficulties in production, distribution and delivery of such biologics. If Biocon encounters such difficulties, our ability to provide supply of itolizumab (EQ001) for clinical trials, our ability to obtain marketing approval, or our ability to obtain commercial supply of our products, if approved, could be delayed or stopped;
- We rely, and intend to continue to rely, on third parties to conduct our clinical trials and perform some of our research and preclinical studies. If these third parties do not satisfactorily carry out their contractual duties, fail to comply with applicable regulatory requirements or meet expected deadlines, our development programs may be delayed or subject to increased costs or we may be unable to obtain regulatory approval, each of which may have an adverse effect on our business, financial condition, results of operations and prospects;
- We currently have no marketing and sales organization and have no experience as a company in commercializing products, and we may have to invest significant resources to develop these capabilities. If we are unable to establish marketing and sales capabilities or enter into agreements with third parties to market and sell itolizumab (EQ001), we may not be able to generate product revenue;

- Even if itolizumab (EQ001) receives marketing approval in any indication, it may fail to achieve the degree of market acceptance by physicians, patients, hospitals, cancer treatment centers, healthcare payors and others in the medical community necessary for commercial success;
- If we are unable to obtain or protect intellectual property rights covering our product candidates, or if the scope of the intellectual property protection is not sufficiently broad, our competitors could develop and commercialize products similar or identical to ours, and we may not be able to compete effectively in our market;
- We depend on intellectual property licensed from Biocon and termination of our license could result in the loss of significant rights, which would harm our business; and
- The novel coronavirus global pandemic has adversely impacted our business, including our clinical trials, and could further impact other aspects of our business including our supply chain, personnel, and our business development activities, the magnitude and extent of which are uncertain.

RISK FACTORS

You should carefully consider the following risk factors, as well as the other information in this report, before deciding whether to purchase, hold or sell shares of our common stock. The occurrence of any of the following risks could harm our business, financial condition, results of operations and/or growth prospects or cause our actual results to differ materially from those contained in forward-looking statements we have made in this report and those we may make from time to time. You should consider all of the factors described as well as the other information in our financial statements and the related notes and "Management's Discussion and Analysis of Financial Condition and Results of Operations" when evaluating our business. If any of the following risks actually occurs, our business, financial condition, results of operations and future growth prospects would likely be materially and adversely affected. In these circumstances, the market price of our common stock would likely decline and you may lose all or part of your investments. Additional risks and uncertainties not presently known to us or that we currently deem immaterial also may impair our business operations.

Risks Related to Our Financial Position and Need for Additional Capital

We have a very limited operating history and have never generated any revenues.

We are an early-stage biotechnology company with a very limited operating history that may make it difficult to evaluate the success of our business to date and to assess our future viability. We were incorporated in March 2017 and our operations, to date, have consisted of organizing and staffing our company, business planning, raising capital, in-licensing rights to itolizumab (EQ001), conducting preclinical research, filing three INDs, commencing clinical development of itolizumab (EQ001), conducting business development activities, and the general and administrative activities associated with being a public company. We have not yet demonstrated an ability to successfully complete any clinical trials and have never completed the development of any product candidate, and we have never generated any revenue from product sales or otherwise. Consequently, we have no meaningful operations upon which to evaluate our business, and predictions about our future success or viability may not be as accurate as they could be if we had a longer operating history or a history of successfully developing and commercializing biopharmaceutical products.

We expect to incur significant losses for the foreseeable future and may never achieve or maintain profitability.

Investment in biopharmaceutical product development is highly speculative because it entails substantial upfront capital expenditures and significant risk that a product candidate will fail to gain regulatory approval or become commercially viable. We have never generated any revenues, and we cannot estimate with precision the extent of our future losses. For the years ended December 31, 2020 and 2019, our net losses were $29.8 million and $25.6 million, respectively. As of December 31, 2020, we had an accumulated deficit of $70.9 million. We expect to incur increasing levels of operating losses for the foreseeable future as we execute our plan to continue our research and development activities, including the ongoing and future clinical development of itolizumab (EQ001), potentially expand the indications for which we conduct clinical development of itolizumab (EQ001), potentially acquire new products and/or product candidates, seek regulatory approvals of and potentially commercialize any approved product candidates, hire additional personnel and protect our intellectual property. In addition, if we obtain regulatory approval for itolizumab (EQ001), we expect to incur increased sales and marketing expenses, with certain of such investments potentially being made in advance of an approval. As a result, we expect to continue to incur significant and increasing operating losses and negative cash flows for the foreseeable future. These losses have had and will continue to have an adverse effect on our financial position and working capital.

To become and remain profitable, we must develop or acquire and eventually commercialize a product with significant market potential. This will require us to be successful in a range of challenging activities, including completing preclinical studies and clinical trials of itolizumab (EQ001), obtaining marketing approval for itolizumab (EQ001), manufacturing, marketing and selling itolizumab (EQ001) if we obtain marketing approval, and satisfying post-marketing requirements, if any. We may never succeed in these activities and, even if we succeed in obtaining approval for and commercializing itolizumab (EQ001), we may never generate revenues that are significant enough to achieve profitability. In addition, as a young business, we may encounter unforeseen expenses, difficulties, complications, delays and other known and unknown challenges. Furthermore, because of the numerous risks and uncertainties associated with biopharmaceutical product development, we are unable to accurately predict the timing or amount of increased expenses or when, or if, we will be able to achieve profitability. If we do achieve profitability, we may not be able to sustain or increase profitability on a quarterly or annual basis and we may continue to incur substantial research and development and other expenditures to develop and market additional product candidates. Our failure to become and remain profitable would decrease the value of the company and could impair our ability to raise capital, maintain our research and development efforts, expand our business or continue our operations. A decline in the value of our company could also cause you to lose all or part of your investment.

We will require substantial additional funding to complete the development and any commercialization of itolizumab (EQ001). If we are unable to raise this capital when needed, we may be forced to delay, reduce or eliminate our research and development programs or other operations.

We expect our expenses to increase substantially during the next few years. The development of biotechnology product candidates is capital intensive. As itolizumab (EQ001) enters and advances through preclinical studies and clinical trials, we will need substantial additional funds to expand our clinical, regulatory and quality capabilities. In addition, if we obtain marketing approval for itolizumab (EQ001), we expect to incur significant commercialization expenses for marketing, sales, manufacturing and distribution, some of those investments may be made at-risk in advance of receiving an approval.

As of December 31, 2020, we had $82.2 million in cash, cash equivalents and short-term investments. Based on our current operating plan, we believe that our existing cash, cash equivalents and short-term investments as of December 31, 2020 will enable us to fund our operations for at least the next 12 months. However, changing circumstances or inaccurate estimates by us may cause us to use capital significantly faster than we currently anticipate, and we may need to spend more money than currently expected because of circumstances beyond our control. For example, our ongoing and future clinical trials for itolizumab (EQ001) may encounter technical, enrollment or other issues that could cause our development costs to increase more than we expect. We do not have sufficient funds to complete the clinical development of itolizumab (EQ001) through regulatory approval for our current indications, and we will need to raise substantial additional capital to complete the development and commercialization of itolizumab (EQ001).

Future capital requirements will depend on many factors, including:

- the initiation, progress, timing, costs and results of our ongoing and future clinical trials for itolizumab (EQ001), including as such activities may be adversely impacted by the COVID-19 pandemic;
- the number and scope of indications we decide to pursue for itolizumab (EQ001) development;
- the cost, timing and outcome of regulatory review of any BLA we may submit for itolizumab (EQ001);
- the costs and timing of manufacturing for itolizumab (EQ001), if approved;
- the costs of preparing, filing and prosecuting patent applications, maintaining and enforcing our intellectual property rights and defending intellectual property-related claims;
- our efforts to enhance operational systems and our ability to attract, hire and retain qualified personnel, including personnel to support the development of itolizumab (EQ001);
- the costs associated with being a public company;
- the terms and timing of establishing and maintaining collaborations, licenses and other similar arrangements;
- the extent to which we acquire or in-license other product candidates and technologies; and
- the cost associated with commercializing itolizumab (EQ001), if approved for commercial sale.

In July 2020, we entered into an at-the-market facility with Jefferies, or the 2020 ATM Facility, under which we may offer and sell shares of our common stock having an aggregate offering price of up to $150 million from time to time through Jefferies acting as our sales agent. As of December 31, 2020, we sold an aggregate of 788,685 shares of our common stock under the 2020 ATM Facility for gross proceeds of $10.4 million. There have been no sales of shares of our common stock under the 2020 ATM Facility since December 31, 2020 and through the date of the filing of this Annual Report on Form 10-K.

In March 2020, we entered into the Purchase Agreement, with Lincoln Park which provides that, upon the terms and subject to the conditions and limitations set forth therein, we may sell to Lincoln Park up to $15.0 million of shares of our common stock from time to time over the 36-month term of the Purchase Agreement. Upon execution of the Purchase Agreement, we issued 65,374 shares of our common stock to Lincoln Park as commitment shares in accordance with the closing conditions contained within the Purchase Agreement. As of December 31, 2020 and through the date of the filing of this Annual Report on Form 10-K, we have not sold any shares of our common stock to Lincoln Park under the Purchase Agreement.

In February 2021, we entered into a securities purchase agreement with institutional investors, whereby we sold 4,285,710 shares of common stock and issued warrants to purchase 1,285,713 shares of common stock for gross proceeds of $30.0 million. The warrants are exercisable immediately upon issuance at an initial exercise price of $14.00 per share and are exercisable on a cashless basis. The warrants expire on the earlier of (i) the fifth anniversary of issuance or (ii) the 15th calendar date following the date on which we close upon an equity financing that results in not less than $25 million of gross proceeds to us at a price per share of common stock equal to or greater than $25.00, at which time, all remaining warrants will automatically exercise on a cashless basis.

Our commercial revenues, if any, will be derived from sales of products, which is unlikely to happen within the next 12 months, if ever. Accordingly, we will need to obtain substantial additional funding in connection with our continuing operations. Adequate additional financing may not be available to us on acceptable terms, or at all. In addition, the COVID-19 pandemic continues to rapidly evolve and has already resulted in a significant disruption of global financial markets. Our ability to raise additional capital may be adversely impacted by potential worsening global economic conditions and the recent disruptions to, and volatility in, the credit and financial markets in the United States and worldwide resulting from the COVID-19 pandemic. If the disruption persists and deepens, we could experience an inability to access additional capital. Subject to limited exceptions, our Loan Agreement also prohibits us from incurring indebtedness without the prior written consent of the lenders. In addition, we may seek additional capital due to favorable market conditions or strategic considerations even if we believe we have sufficient funds for our current or future operating plans. If we are unable to raise capital when needed or on attractive terms, we would be forced to delay, reduce or eliminate our research and development programs or other operations.

The terms of our Loan Agreement place restrictions on our operating and financial flexibility.

In September 2019, we entered into the Loan Agreement with Oxford Finance LLC and Silicon Valley Bank, as amended in December 2020, providing for up to $20.0 million in term loans, which is secured by a first priority perfected security interest in substantially all of our current and future assets, other than our intellectual property (except rights to payment from the sale, licensing or disposition of such intellectual property). We borrowed $10.0 million upon execution of the Loan Agreement.

The Loan Agreement includes affirmative and restrictive covenants, including covenants regarding delivery of financial statements, maintenance of inventory, payment of taxes, maintenance of insurance, protection of intellectual property rights, dispositions of property, business combinations or acquisitions, incurrence of additional indebtedness or liens, investments and transactions with affiliates, among other customary covenants. We are also restricted from paying dividends or making other distributions or payments on our capital stock, subject to limited exceptions.

The Loan Agreement also includes events of default, the occurrence and continuation of which provide Oxford Finance LLC, as collateral agent, with the right to exercise remedies against us and the collateral securing the loans under the Loan Agreement, including foreclosure against our properties securing the Loan Agreement, including our cash, potentially requiring us to renegotiate our agreement on terms less favorable to us or to immediately cease operations. These events of default include, among other things, our failure to satisfy our payment obligations under the Loan Agreement, the breach of certain of our other covenants under the Loan Agreement, or the occurrence of a material adverse change, cross defaults to other indebtedness or material agreements, judgment defaults and defaults related to failure to maintain governmental approvals failure of which to maintain could result in a material adverse effect. Further, if we are liquidated, the lenders' right to repayment would be senior to the rights of the holders of our common stock to receive any proceeds from the liquidation. The lenders could declare a default upon the occurrence of any event that they interpret as a material adverse change as defined under the Loan Agreement, thereby requiring us to repay the loan immediately or to attempt to reverse the declaration of default through negotiation or litigation. Any declaration by the lenders of an event of default could significantly harm our business and prospects and could cause the price of our common stock to decline.

Risks Related to Our Business and to the Development and Regulatory Approval of Itolizumab (EQ001)

We are highly dependent on the success of our product candidate, itolizumab (EQ001), which is in early stage clinical development, and we may not be able to successfully obtain regulatory or marketing approval for, or successfully commercialize, this product candidate in any of the indications for which we plan to develop it.

Our future success will depend almost entirely on our ability to successfully develop, obtain regulatory approval for and then successfully commercialize itolizumab (EQ001), in any of the indications for which we initially plan to develop it, including treatment of aGVHD, lupus nephritis and uncontrolled asthma, which may never occur. We have no product candidates in our pipeline other than itolizumab (EQ001). We currently generate no revenues from sales of any biopharmaceutical products or otherwise, and we may never be able to develop or commercialize a marketable biopharmaceutical product.

Before we can market and sell itolizumab (EQ001) in the United States, we will need to manage research and development activities, commence and complete clinical trials, obtain necessary regulatory approvals from the FDA and build a commercial organization or enter into a marketing collaboration with a third party, among other things. We cannot assure you that we will be able to successfully complete the necessary clinical trials and/or obtain regulatory approval and develop sufficient commercial capabilities for itolizumab (EQ001). We have not submitted a BLA to the FDA for any product candidate. Further, itolizumab (EQ001) may not receive regulatory approval even if it is successful in clinical trials. If we do not receive regulatory approvals, our business, prospects, financial condition and results of operations will be adversely affected. Even if we obtain regulatory approval, we may never generate significant revenues from any commercial sales of itolizumab (EQ001). If itolizumab (EQ001) is approved and we fail to successfully commercialize it, we may be unable to generate sufficient revenues to sustain and grow our business, and our business, prospects, financial condition and results of operations will be adversely affected.

Itolizumab (EQ001) is a monoclonal antibody that selectively targets CD6, a target for which there are no FDA-approved therapies. This makes it difficult to predict the timing and costs of clinical development for itolizumab (EQ001). We do not know whether our approach in targeting CD6 will allow us to develop any products of commercial value.

We have concentrated our research and development approach on targeting CD6, and our future success depends on the successful development of this therapeutic approach to the diseases we are targeting for treatment. To date, there are no FDA-approved drugs that target CD6, and while there are a number of independent studies clinically validating CD6 as a target, other than our partner Biocon, CD6 has not traditionally been a pathway targeted by other biopharmaceutical companies. The regulatory approval process for novel product candidates such as itolizumab (EQ001) can be more expensive and take longer than for other, better known or extensively studied therapeutic approaches. Delay or failure to obtain, or unexpected costs in obtaining, the regulatory approval necessary to bring itolizumab (EQ001) to market could decrease our ability to generate sufficient revenue to maintain our business.

Additionally, companion diagnostic tests may be developed for use with itolizumab (EQ001). We, or our collaborators, will be required to obtain FDA clearance or approval for these tests, as well as coverage and reimbursement separate and apart from the approval and coverage and reimbursement we seek for our itolizumab (EQ001). Our inability to collaborate with a companion diagnostics developer could have a material and adverse effect on our business, financial condition, results of operations and prospects.

We are very early in our development efforts. We only recently initiated our initial clinical trials of itolizumab (EQ001), and as a company, we have limited experience in these areas.

We initiated our first clinical trial of itolizumab (EQ001) for the treatment of aGVHD in the first quarter of 2019, our second clinical trial of itolizumab (EQ001) for the treatment of uncontrolled moderate to severe asthma in the second quarter of 2019 and our third clinical trial of itolizumab (EQ001) for the treatment of lupus nephritis in the third quarter of 2019. In March 2020, as a result of impacts and risks associated with the COVID-19 pandemic, we decided to pause enrollment in our Phase 1b clinical trials of itolizumab (EQ001) in uncontrolled asthma and lupus nephritis. In July 2020, we announced that patient enrollment in both of these trials had resumed. We have three active INDs with the FDA for the use of itolizumab (EQ001) in the treatment of aGVHD, lupus nephritis, and COVID-19 patients, and we have not yet filed an IND with the FDA for the use of itolizumab (EQ001) for the treatment of uncontrolled moderate to severe asthma. Because of our limited interaction with the FDA, we may not learn of certain information or data that the FDA may request until future interactions. In part because of our limited infrastructure, experience conducting clinical trials as a company and regulatory interactions, we also cannot be certain that our ongoing and future clinical trials will be completed on time, if at all, that our planned clinical trials will be initiated on time, if at all, or that our planned development programs would be acceptable to the FDA.

Adverse safety and toxicology findings may emerge as we conduct clinical trials. In addition, success in early clinical trials does not mean that later clinical trials will be successful, because later-stage clinical trials may be conducted in broader patient

populations and involve different study designs. For example, although itolizumab (EQ001) and ALZUMAb share the same primary monoclonal antibody sequence, they are manufactured in different cell lines and thus could be considered different biopharmaceutical products. Therefore, results seen in clinical trials of ALZUMAb conducted by Biocon may not be predictive of the results of our clinical trials of itolizumab (EQ001). Furthermore, our future clinical trials will need to demonstrate sufficient safety and efficacy in larger patient populations for approval by the FDA. Companies frequently suffer significant setbacks in advanced clinical trials, even after earlier clinical trials have shown promising results, and we cannot be certain that we will not face similar setbacks. Moreover, preclinical and clinical data are often susceptible to varying interpretations and analyses, 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, only a small percentage of biologics under development result in the submission of a BLA to the FDA and even fewer are approved for commercialization.

Our ability to generate product revenues, which we do not expect will occur for at least the next several years, if ever, will depend heavily on our ability to successfully complete the above activities and any other activities required for the successful development and eventual commercialization of itolizumab (EQ001). The success of itolizumab (EQ001) will further depend on factors such as:

- completion of our ongoing and future clinical trials and preclinical studies with favorable results, including activities that may be adversely impacted by the COVID-19 pandemic;
- acceptance of INDs by the FDA for our future clinical trials, as applicable;
- timely and successful enrollment in, and completion of, clinical trials with favorable results;
- demonstrating safety, efficacy and acceptable risk-benefit profile of itolizumab (EQ001) to the satisfaction of the FDA;
- receipt of marketing approvals from the FDA;
- maintaining arrangements with Biocon, our third-party manufacturer, for cell lines and drug product clinical supply and, if and when approved, for commercial supply of itolizumab (EQ001);
- establishing sales, marketing and distribution capabilities and launching commercial sale of itolizumab (EQ001), if and when approved in one or more indications;
- acceptance of itolizumab (EQ001), if and when approved, by patients, the medical community and third-party payors;
- effectively competing with other therapies;
- obtaining and maintaining patent, trade secret and other intellectual property protection and regulatory exclusivity for itolizumab (EQ001); and
- maintaining a continued acceptable safety profile of itolizumab (EQ001), following approval.

If we do not achieve one or more of these factors in a timely manner, we could experience significant delays or an inability to successfully obtain marketing approval and commercialize itolizumab (EQ001), which would materially harm our business.

We have licensed itolizumab from Biocon pursuant to an exclusive license agreement, which license is conditioned upon us meeting certain diligence obligations with respect to the development, regulatory approval and commercialization of itolizumab, and making significant milestone payments in connection with regulatory approval and commercial milestones as well as royalty payments.

We are party to an exclusive license agreement with Biocon, pursuant to which we initially acquired an exclusive license to develop, make, have made, use, sell, have sold, offer for sale, import and otherwise exploit itolizumab and any pharmaceutical composition or preparation containing or comprising itolizumab in the United States and Canada and which was later amended to grant us the same exclusive license in Australia and New Zealand as well, or, collectively, the Equillium Territory. We are obligated, under this agreement, to achieve certain development milestones within specified timeframes in order to retain all of the licensed rights. Certain of such milestones are largely outside of our control. We are also obligated to use commercially reasonable efforts to develop and seek regulatory approval for, and if regulatory approval is obtained, to commercialize, itolizumab in the Equillium Territory and to secure funding for the development of itolizumab in two or more indications. Further, we are obligated to make certain cash milestone payments to Biocon upon completion of certain regulatory approval and commercial milestones and are required to pay royalties to Biocon on net sales of itolizumab, if approved. Though we

believe that the royalty rates and milestone payments are reasonable in light of our business plan, we will require large amounts of capital to satisfy these obligations. We may become obligated to make a milestone payment when we do not have the cash on hand to make such payment, which could require us to delay our clinical trials, curtail our operations, scale back our commercialization and marketing efforts or seek funds to meet these obligations on terms unfavorable to us. In addition, if we are unable to make any payment when due or, if we fail to achieve the development milestones within the timeframes required by the license agreement, or to satisfy our general diligence obligation to use commercially reasonable efforts to develop, register and commercialize itolizumab and to secure funding for the development of itolizumab in two or more indications, Biocon may have the right to limit the scope of our license or terminate the agreement and all of our rights to develop and commercialize itolizumab.

We have licensed the rights to itolizumab in the United States, Canada, Australia, and New Zealand. Any adverse developments that occur during any clinical trials with itolizumab conducted by Biocon or third parties in other jurisdictions may affect our ability to obtain regulatory approval or commercialize itolizumab.

Biocon, its Cuban partner, CIMAB, S.A., and their licensees, over which we have no control, have the rights to develop itolizumab worldwide and commercialize itolizumab in geographies outside of the Equillium Territory. Itolizumab is approved in India for the treatment of moderate to severe plaque psoriasis, and is marketed by Biocon as ALZUMAb. Biocon was also granted restricted emergency use approval of itolizumab by the DCGI for the treatment of CRS in COVID-19 patients with moderate to severe ARDS in India. In September 2020, the DCGI granted approval of ALZUMAb-L, for the treatment of chronic plaque psoriasis, as well as restricted emergency use approval for the treatment of CRS in COVID-19 patients with moderate to severe ARDS. We are also aware that ALZUMAb and ALZUMAb-L have been and may continue to be used in India on a compassionate use basis, off label, and/or in investigator-initiated studies.

We are aware of one currently active clinical study of itolizumab being conducted in Cuba in subjects with COVID-19, as well as other completed or inactive clinical studies in Cuba in Type 1 diabetes, multiple sclerosis, rheumatoid arthritis, and psoriasis. Centro de Immunologia Molecular was granted regulatory approval in Cuba for itolizumab to be used in patients with rheumatoid arthritis and psoriasis as well as emergency use approval in patients with COVID-19.

The results of clinical studies with itolizumab conducted by Biocon or third parties could impact our development plans and the potential commercial prospects for itolizumab (EQ001). Further, we do not control and are unable to validate study results reported by Biocon or third parties. Any errors or omissions in the data and public disclosures reported by Biocon or third parties could have a material adverse effect on our stock price and business plans.

If serious adverse events occur with patients using ALZUMAb or ALZUMAb-L during any clinical trials, exploratory studies, or other clinical uses of itolizumab conducted or supported by Biocon or third parties, regulatory authorities, including the FDA, may delay, limit or deny approval of itolizumab (EQ001) or require us to conduct additional clinical trials as a condition to marketing approval, which would increase our costs. If we receive regulatory approval for itolizumab (EQ001) and a new and serious safety issue is identified in connection with the commercial use of ALZUMAb or ALZUMAb-L or in clinical trials, exploratory studies, or other clinical uses of itolizumab conducted or supported by Biocon or third parties, regulatory authorities may withdraw their approval of the product or otherwise restrict our ability to market and sell itolizumab. In addition, treating physicians may be less willing to administer our product due to concerns over such adverse events, which would limit our ability to commercialize itolizumab (EQ001).

The development and commercialization of biopharmaceutical products are subject to extensive regulation, and we may not obtain regulatory approvals for itolizumab (EQ001) in any of the indications for which we plan to develop it, or any future product candidates, on a timely basis or at all.

The clinical development, manufacturing, labeling, packaging, storage, recordkeeping, advertising, promotion, export, import, marketing, distribution, adverse event reporting, including the submission of safety and other post-marketing information and reports, and other possible activities relating to itolizumab (EQ001), currently our only product candidate, as well as any other product candidate that we may develop in the future, are subject to extensive regulation. Marketing approval of biologics in the United States requires the submission of a BLA to the FDA and we are not permitted to market any product candidate in the United States until we obtain approval from the FDA of the BLA for that product. A BLA must be supported by extensive clinical and preclinical data, as well as extensive information regarding pharmacology, chemistry, manufacturing and controls.

FDA approval of a BLA is not guaranteed, and the review and approval process is an expensive and uncertain process that may take several years. The FDA also has substantial discretion in the approval process. The number and types of preclinical studies and clinical trials that will be required for BLA approval varies depending on the product candidate, the disease or the condition that the product candidate is designed to treat and the regulations applicable to any particular product candidate. Despite the time and expense associated with preclinical studies and clinical trials, failure can occur at any stage. The results of preclinical

and early clinical trials of itolizumab (EQ001) or any future product candidates may not be predictive of the results of our later-stage clinical trials.

Clinical trial failure may result from a multitude of factors including flaws in trial design, dose selection, placebo effect, patient enrollment criteria and failure to demonstrate favorable safety or efficacy traits, and failure in clinical trials can occur at any stage. Companies in the biopharmaceutical industry frequently suffer setbacks in the advancement of clinical trials due to lack of efficacy or adverse safety profiles, notwithstanding promising results in earlier trials. Based upon negative or inconclusive results, we may decide, or regulators may require us, to conduct additional clinical trials or preclinical studies. In addition, data obtained from clinical trials are susceptible to varying interpretations, and regulators may not interpret our data as favorably as we do, which may further delay, limit or prevent marketing approval.

The FDA could delay, limit or deny approval of a product candidate for many reasons, including because they:

- may not deem our product candidate to be adequately safe and effective;
- may not agree that the data collected from clinical trials are acceptable or sufficient to support the submission of a BLA or other submission or to obtain regulatory approval, and may impose requirements for additional preclinical studies or clinical trials;
- may determine that adverse events experienced by participants in our clinical trials represents an unacceptable level of risk;
- may determine that population studied in the clinical trial may not be sufficiently broad or representative to assure safety in the full population for which we seek approval;
- may not accept clinical data from trials, which are conducted at clinical facilities or in countries where the standard of care is potentially different from that of the United States;
- may disagree regarding the formulation, labeling and/or the specifications;
- may not approve the manufacturing processes or facilities associated with our product candidate;
- may change approval policies or adopt new regulations; or
- may not accept a submission due to, among other reasons, the content or formatting of the submission.

Generally, public concern regarding the safety of biopharmaceutical products could delay or limit our ability to obtain regulatory approval, result in the inclusion of unfavorable information in our labeling, or require us to undertake other activities that may entail additional costs. We have not obtained FDA approval for any product. This lack of experience may impede our ability to obtain FDA approval in a timely manner, if at all, for itolizumab.

If we experience delays in obtaining approval or if we fail to obtain approval of itolizumab, our commercial prospects will be harmed and our ability to generate revenues will be materially impaired which would adversely affect our business, prospects, financial condition and results of operations.

Any delays in the commencement or completion, or termination or suspension, of our ongoing, planned or future clinical trials could result in increased costs to us, delay or limit our ability to raise capital or generate revenue and adversely affect our commercial prospects.

Any delays in the commencement or completion, or termination or suspension, of our ongoing, planned or future clinical trials could result in increased costs to us, delay or limit our ability to generate revenue and adversely affect our commercial prospects. Before we can initiate clinical trials of itolizumab (EQ001) in any distinct indication, we must submit the results of preclinical studies to the FDA along with other information, including information about itolizumab (EQ001) chemistry, manufacturing and controls and our proposed clinical trial protocol, as part of an IND or similar regulatory filing.

Before obtaining marketing approval from the FDA for the sale of itolizumab (EQ001) in any indication, we must conduct extensive clinical studies to demonstrate the safety and efficacy of itolizumab (EQ001). Clinical testing is expensive, time consuming and uncertain as to outcome. In addition, we expect to rely in part on preclinical, clinical and quality data generated by our partner, Biocon, as well as contract research organizations, or CROs, and other third parties for regulatory submissions for itolizumab (EQ001). While we have or will have agreements governing these third parties' services, we have limited influence over their actual performance. If these third parties do not make data available to us, or, if applicable, make regulatory submissions in a timely manner, in each case pursuant to our agreements with them, our development programs may be

significantly delayed and we may need to conduct additional studies or collect additional data independently. In either case, our development costs would increase. To date, we have only submitted INDs for clinical trials of itolizumab (EQ001) for the treatment of aGVHD, lupus nephritis, and COVID-19.

The FDA may require us to conduct additional preclinical studies for itolizumab (EQ001) or any future product candidate before it allows us to initiate clinical trials under any IND, which may lead to additional delays and increase the costs of our preclinical development programs. Any such delays in the commencement or completion of our ongoing, planned or future clinical trials could significantly affect our product development costs. We do not know whether our ongoing and future trials will be completed on schedule, if at all, or whether our trials will begin on time, if at all. The commencement and completion of clinical trials can be delayed for a number of reasons, including delays related to:

- impacts and risks associated with global health epidemics such as those related to COVID-19 (for example, in March 2020, as a result of impacts and risks associated with the COVID-19 pandemic, we decided to pause enrollment in our Phase 1b clinical trials of itolizumab (EQ001) in uncontrolled asthma and lupus nephritis), which enrollment was resumed in July 2020;
- the FDA disagreeing as to the design or implementation of our clinical studies;
- obtaining FDA authorizations to commence a trial or reaching a consensus with the FDA on trial design;
- any failure or delay in reaching an agreement with CROs and clinical trial sites, the terms of which can be subject to extensive negotiation and may vary significantly among different CROs and trial sites;
- obtaining approval from one or more institutional review boards, or IRBs;
- additional nonclinical pharmacology and toxicology studies to support Phase 2 and 3 trials;
- IRBs refusing to approve, suspending or terminating the trial at an investigational site, precluding enrollment of additional subjects, or withdrawing their approval of the trial;
- changes to clinical trial protocol;
- clinical sites deviating from trial protocol or dropping out of a trial;
- manufacturing sufficient quantities of product candidate or obtaining sufficient quantities of combination therapies for use in clinical trials;
- subjects failing to enroll or remain in our trial at the rate we expect, or failing to return for post-treatment follow-up. As a result of impacts associated with the COVID-19 pandemic, we have observed slower-than-expected enrollment rates in our ongoing clinical trials, especially in our Phase 1b clinical trial in uncontrolled asthma being conducted at sites in Australia and New Zealand;
- subjects choosing an alternative treatment, or participating in competing clinical trials;
- lack of adequate funding to continue the clinical trial;
- subjects experiencing severe or unexpected drug-related adverse effects;
- occurrence of serious adverse events in trials of the same class of agents conducted by other companies;
- selection of clinical end points that require prolonged periods of clinical observation or analysis of the resulting data;
- a facility manufacturing our product candidates or any of their components being ordered by the FDA (or its own regulatory authorities if such facility is located outside the United States) to temporarily or permanently shut down or cease export of such materials due to violations of current good manufacturing practice, or cGMP, regulations or other applicable requirements, changes in export restrictions and controls, or infections or cross-contaminations during the manufacturing process;
- any changes to our manufacturing process that may be necessary or desired;

- third-party clinical investigators losing the licenses or permits necessary to perform our clinical trials, not performing our clinical trials on our anticipated schedule or consistent with the clinical trial protocol, good clinical practices, or GCP, or other regulatory requirements;
- us, or our third-party contractors not performing data collection or analysis in a timely or accurate manner or improperly disclosing data prematurely or otherwise in violation of a clinical trial protocol; or
- third-party contractors becoming debarred or suspended or otherwise penalized by the FDA or other government or regulatory authorities for violations of regulatory requirements, in which case we may need to find a substitute contractor, and we may not be able to use some or all of the data produced by such contractors in support of our marketing applications.

We could also encounter delays if a clinical trial is suspended or terminated by us, by the IRBs of the institutions in which such trials are being conducted, by a Data Safety Monitoring Board for such trial or by the FDA or by other regulatory agencies or health authorities that have jurisdiction in countries in which the trial is being conducted. Such authorities may impose such a suspension or termination due to a number of factors, including failure to conduct the clinical trial in accordance with regulatory requirements or our clinical protocols, inspection of the clinical trial operations or trial site by the FDA or other regulatory agencies resulting in the imposition of a clinical hold, unforeseen safety issues or adverse side effects, failure to demonstrate a benefit from using a pharmaceutical, changes in governmental regulations or administrative actions or lack of adequate funding to continue the clinical trial. In addition, changes in regulatory requirements and policies may occur, and we may need to amend clinical trial protocols to comply with these changes. Amendments may require us to resubmit our clinical trial protocols to IRBs for reexamination, which may impact the costs, timing or successful completion of a clinical trial.

Certain of our scientific advisors or consultants who receive compensation from us are likely to be investigators for our future clinical trials. Under certain circumstances, we may be required to report some of these relationships to the FDA or other regulatory agencies. The FDA or other regulatory agencies may conclude that a financial relationship between us and a principal investigator has created a conflict of interest or otherwise affected interpretation of the study. The FDA may therefore question the integrity of the data generated at the applicable clinical trial site and the utility of the clinical trial itself may be jeopardized. This could result in a delay in approval, or rejection, of our marketing applications by the FDA or other regulatory agencies and may ultimately lead to the denial of marketing approval of itolizumab (EQ001) in one or more indications. If we experience delays in the completion of, or termination of, any clinical trial of itolizumab (EQ001), the commercial prospects of itolizumab (EQ001) will be harmed, and our ability to generate product revenues will be delayed. Moreover, any delays in completing our clinical trials will increase our costs, slow down our development and approval process and jeopardize our ability to commence product sales and generate revenues which may harm our business, financial condition, results of operations and prospects significantly.

If we experience delays or difficulties in enrolling patients in our ongoing or planned clinical trials, our receipt of necessary regulatory approval could be delayed or prevented.

We may not be able to continue our ongoing or initiate our future clinical trials for itolizumab (EQ001) if we are unable to identify and enroll a sufficient number of eligible patients to participate in these trials as required by the FDA. Multiple factors could contribute to such challenges of enrolling our clinical trials, including impacts related to the COVID-19 pandemic, which have already adversely impacted enrollment across all three of our current clinical trials. In particular, enrollment in our Phase 1b clinical trial in uncontrolled asthma has been progressing slower-than-expected due to disruptions to operations at clinical trial sites in Australia related to the COVID-19 pandemic as well as due to patients' high-risk status for COVID-19 and a decrease in asthma exacerbations as a result of stay-at-home and social distancing measures. In addition, some of our competitors may have ongoing clinical trials for product candidates that would treat the same indications as itolizumab (EQ001), and patients who would otherwise be eligible for our clinical trials may instead enroll in clinical trials of our competitors' product candidates. This is acutely relevant for our development of itolizumab (EQ001) for the treatment of patients with uncontrolled moderate to severe asthma and lupus nephritis, each diseases for which there is significant competition for clinical trial subjects. Patient enrollment is also affected by other factors, including:

- impacts and risks associated with global health epidemics such as those related to COVID-19;
- severity of the disease under investigation;
- our ability to recruit clinical trial investigators of appropriate competencies and experience;
- invasive procedures required to obtain evidence of the product candidate's performance during the clinical trial;
- availability and efficacy of approved medications for the disease under investigation;

- eligibility criteria defined in the protocol for the trial in question;
- the size of the patient population required for analysis of the trial's primary endpoints;
- perceived risks and benefits;
- efforts to facilitate timely enrollment in clinical trials;
- reluctance of physicians to encourage patient participation in clinical trials;
- the ability to monitor patients adequately during and after treatment;
- our ability to obtain and maintain patient consents; and
- proximity and availability of clinical trial sites for prospective patients.

Our inability to enroll and retain a sufficient number of patients for our clinical trials would result in significant delays or may require us to abandon one or more clinical trials altogether. Enrollment delays in our clinical trials may result in increased development costs, which would cause the value of our company to decline and limit our ability to obtain additional financing.

Adverse side effects or other safety risks associated with itolizumab could delay or preclude approval, cause us to suspend or discontinue clinical trials, abandon further development, limit the commercial profile of an approved label, or result in significant negative consequences following marketing approval, if any.

As is the case with pharmaceuticals generally, it is likely that there may be side effects and adverse events associated with itolizumab in our ongoing and future clinical trials as well as in clinical trials, investigator-initiated studies, or off-label usage supported by Biocon or third parties.

In the Phase 1 clinical trial of itolizumab (EQ001) conducted by Biocon in Australia in healthy subjects, there were no serious adverse events, dose limiting toxicities, or study drug discontinuations reported in stage 1 of this trial, where doses up to 3.2 mg/kg were administered subcutaneously. The trial also included a separate stage to compare the pharmacokinetics of the intravenous administration of itolizumab (EQ001) to ALZUMAb and determine the absolute bioavailability of subcutaneous itolizumab (EQ001), but this stage was terminated early due to the occurrence of an initial decrease in lymphocyte counts and the occurrence of transient lymphopenia in the healthy subjects. No serious adverse events were reported in either stage of the Phase 1 trial.

Biocon has completed four clinical studies of ALZUMAb in India in patients with rheumatoid arthritis, chronic plaque psoriasis, and for the treatment of CRS in COVID-19 patients with moderate to severe ARDS at dose levels ranging from 0.2 mg/kg to 1.6 mg/kg. We are further aware that Biocon is supporting compassionate use of ALZUMAb in treatment of refractory patients with aGVHD in India. In Biocon's Phase 3 clinical trial in chronic plaque psoriasis, infusion-related reactions and infusion-related events were the main adverse events attributed to itolizumab. There were five serious adverse events reported including exfoliative dermatitis (widespread redness and peeling of the skin), erythrodermic (severe) psoriasis, infusion-related reaction, adjustment disorder with anxiety, and bacterial arthritis. Post-market safety surveillance of ALZUMAb and ALZUMAb-L has collected non-serious reports, primarily involving the dermatologic system organ class that have included rash, acne, urticaria, increased pruritus (itching) and increased psoriasis. Serious reports have included infusion reaction, type 1 hypersensitivity, diarrhea and urticaria (hives).

Biocon may continue to support the use of ALZUMAb or ALZUMAb-L in their own sponsored clinical trials, off-label use, investigator-initiated trials, or third party-sponsored trials over which we have no control. Given such ongoing usage of itolizumab by Biocon or third parties, there is a risk that adverse events may impact our ability to conduct clinical development and successfully commercialize itolizumab (EQ001). Further, there is a risk that any such adverse events are not properly reported, which may also adversely impact our business.

Although itolizumab (EQ001) and ALZUMAb share the same primary monoclonal antibody sequence, they are manufactured in different cell lines and thus could be considered different biopharmaceutical products. Therefore, clinical results seen with ALZUMAb may have no bearing on results, including adverse events, that may be seen with itolizumab (EQ001). Through the date of the filing of this Annual Report on Form 10-K, we are not aware of any meaningful change in the benefit-to-risk profile of itolizumab.

Results of our clinical trials could reveal a high and unacceptable severity and prevalence of side effects or unexpected characteristics. Undesirable side effects caused by itolizumab (EQ001) could result in the delay, suspension or termination of clinical trials by us or the FDA for a number of reasons. Additionally, a material percentage of patients in our ongoing aGVHD

clinical trial may die from this disease, possibly as a result of itolizumab (EQ001), which could impact development of itolizumab (EQ001). If we elect or are required to delay, suspend or terminate any clinical trial, the commercial prospects of itolizumab (EQ001) will be harmed and our ability to generate product revenues from this product candidate will be delayed or eliminated. Serious adverse events observed in clinical trials could hinder or prevent market acceptance of itolizumab (EQ001). Any of these occurrences may harm our business, prospects, financial condition and results of operations significantly.

Moreover, if itolizumab (EQ001) is associated with undesirable side effects in clinical trials or has characteristics that are unexpected, we may elect to abandon or limit its 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, which may limit the commercial expectations for itolizumab (EQ001), if approved. We may also be required to modify our study plans based on findings in our clinical trials. Many biologics that initially showed promise in early stage testing have later been found to cause side effects that prevented further development. In addition, regulatory authorities may draw different conclusions or require additional testing to confirm these determinations.

It is possible that as we test itolizumab (EQ001) in larger, longer and more extensive clinical trials, including with different dosing regimens, or as the use of itolizumab (EQ001) becomes more widespread following any regulatory approval, illnesses, injuries, discomforts and other adverse events that were observed in earlier trials, as well as conditions that did not occur or went undetected in previous trials, will be reported by patients. If such side effects become known later in development or upon approval, if any, such findings may harm our business, financial condition, results of operations and prospects significantly.

In addition, if itolizumab (EQ001) receives marketing approval, and we or others later identify undesirable side effects caused by itolizumab (EQ001), ALZUMAb or ALZUMAb-L, a number of potentially significant negative consequences could result, including:

- regulatory authorities may withdraw approval of itolizumab (EQ001);
- we may be required to recall a product or change the way itolizumab (EQ001) is administered to patients;
- regulatory authorities may require additional warnings on the label, such as a “black box” warning or a contraindication, or issue safety alerts, Dear Healthcare Provider letters, press releases or other communications containing warnings or other safety information about the product;
- we may be required to implement a Risk Evaluation and Mitigation Strategy, or REMS, or create a medication guide outlining the risks of such side effects for distribution to patients;
- additional restrictions may be imposed on the marketing or promotion of the particular product or the manufacturing processes for the product or any component thereof;
- we could be sued and held liable for harm caused to patients;
- itolizumab (EQ001) could become less competitive; and
- our reputation may suffer.

Any of these events could prevent us from achieving or maintaining market acceptance of itolizumab (EQ001), if approved, and could significantly harm our business, financial condition, results of operations and prospects.

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

From time to time, we may publicly disclose preliminary or topline data from our clinical studies, which is based on a preliminary analysis of then-available data, and the results and related findings and conclusions are subject to change following a more comprehensive review of the data related to the particular study or trial. We also make assumptions, estimations, calculations and conclusions as part of our analyses of data, and we may not have received or had the opportunity to fully and carefully evaluate all data. As a result, the topline results that we report may differ from future results of the same studies, or different conclusions or considerations may qualify such results, once additional data have been received and fully evaluated. Topline 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, topline data should be viewed with caution until the final data are available. From time to time, we may also disclose interim 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. Adverse differences between preliminary or interim data and final data could significantly harm our business prospects. Further, disclosure of interim data by us or by our competitors could result in volatility in the price of our common stock.

Further, others, including regulatory agencies, may not accept or agree with our assumptions, estimates, calculations, conclusions or analyses, or may interpret or weigh the importance of data differently, which could impact the value of the particular program, the approvability or commercialization of the particular product candidate or product and our company in general. In addition, the information we choose to publicly disclose regarding a particular study or clinical trial is based on what is typically extensive information, and you or others may not agree with what we determine is the material or otherwise appropriate information to include in our disclosure, and any information we determine not to disclose may ultimately be deemed significant with respect to future decisions, conclusions, views, activities or otherwise regarding a particular biopharmaceutical product, biopharmaceutical product candidate or our business. If the topline data that we report differ from actual results, or if others, including regulatory authorities, disagree with the conclusions reached, our ability to obtain approval for, and commercialize, itolizumab (EQ001) or any future product candidates may be harmed, which could harm our business, operating results, prospects or financial condition.

A Phase 1 single ascending dose clinical trial of itolizumab (EQ001) in normally healthy volunteers was conducted by Biocon in Australia, we are conducting a Phase 1b clinical trial of itolizumab (EQ001) in uncontrolled moderate to severe asthma patients in Australia and New Zealand, and we plan to utilize sites outside of the United States for other clinical trials of itolizumab (EQ001). However, the FDA may not accept data from such trials conducted outside the United States, in which case our development plans will be delayed, which could materially harm our business.

In the fourth quarter of 2017, Biocon completed a Phase 1 clinical trial of itolizumab (EQ001) in healthy subjects in Australia to assess the safety and tolerability of the subcutaneous version of itolizumab (EQ001). The trial also included a separate stage to compare the pharmacokinetics of the intravenous administration of itolizumab (EQ001) to ALZUMAb and determine the absolute bioavailability of subcutaneous itolizumab (EQ001), but this stage was terminated early due to the occurrence of an initial decrease in lymphocyte counts and the occurrence of transient lymphopenia in the healthy subjects. We submitted this data to the FDA as part of our IND submissions for the conduct of clinical trials for the treatment of aGVHD and lupus nephritis. However, it is possible that the FDA will not authorize us to proceed with clinical studies in connection with any future IND submissions in other indications that have different patient populations and we may be required to conduct additional Phase 1 clinical trials, which would be costly and time consuming, and delay aspects of our development plan, which could harm our business.

In June 2019, we initiated a Phase 1b, multiple ascending dose escalation, clinical trial of itolizumab (EQ001) in uncontrolled moderate to severe asthma in Australia and have initiated sites in Australia and New Zealand. In March 2020, as a result of impacts and risks associated with the COVID-19 pandemic, we decided to pause enrollment in our Phase 1b clinical trials of itolizumab (EQ001) in uncontrolled asthma and lupus nephritis. In July 2020, we announced that patient enrollment in both of those trials had resumed. Although the FDA may accept data from clinical trials conducted entirely outside the United States and not under an IND, acceptance of such study data is generally subject to certain conditions. For example, the FDA requires the clinical trial to have been conducted in accordance with GCPs, and the FDA must be able to validate the data from the clinical trial through an onsite inspection if it deems such inspection necessary. In addition, when studies are conducted only at sites outside of the United States, the FDA generally does not provide advance comment on the clinical protocols for the studies, and therefore there is an additional potential risk that the FDA could determine that the study design or protocol for a non-U.S. clinical trial was inadequate, which would likely require us to conduct additional clinical trials. Conducting clinical trials outside the United States also exposes us to additional risks, including risks associated with:

- additional foreign regulatory requirements;
- foreign exchange fluctuations;
- compliance with foreign manufacturing, customs, shipment and storage requirements;
- cultural differences in medical practice and clinical research; and
- diminished protection of intellectual property in some countries.

We may not be successful in our efforts to expand our pipeline by identifying additional indications for which to test itolizumab (EQ001) in the future. We may expend our limited resources to pursue a particular indication for itolizumab (EQ001) and fail to capitalize on product candidates or indications that may be more profitable or for which there is a greater likelihood of success.

Our translational biology program may initially show promise in identifying additional indications for which itolizumab (EQ001) may have therapeutic benefit, yet this may fail to yield additional clinical development opportunities for itolizumab (EQ001) for a number of reasons, including, itolizumab (EQ001) may, on further study, be shown to have harmful side effects, limited to no efficacy or other characteristics that indicate that it is unlikely to receive marketing approval and achieve market acceptance in such additional indications. Research programs to identify additional indications for itolizumab (EQ001) require substantial technical, financial and human resources.

Because we have limited financial and managerial resources, we must prioritize our research programs and will need to focus itolizumab (EQ001) development on the potential treatment of certain indications. As a result, we may forego or delay pursuit of opportunities with other indications or for any future product candidates that later prove to have greater commercial potential. Our resource allocation decisions may cause us to fail to capitalize on viable commercial products or profitable market opportunities. Our spending on itolizumab (EQ001) for specific indications may not yield any commercially viable products. If we do not accurately evaluate the commercial potential or target market for itolizumab (EQ001) or any future product candidate, we may pursue indications that are less attractive and may also relinquish valuable rights to that product candidate through collaboration, licensing or other royalty arrangements in cases in which it would have been more advantageous for us to retain sole development and commercialization rights to such product candidate.

Even if we receive regulatory approval for itolizumab (EQ001) or any future product candidates, we will be subject to ongoing regulatory obligations and continued regulatory review, which may result in significant additional expense. Additionally, itolizumab (EQ001) and any future product candidates, if approved, could be subject to labeling and other restrictions and market withdrawal and we may be subject to penalties if we fail to comply with regulatory requirements or experience unanticipated problems with our products.

Any regulatory approvals that we receive for itolizumab (EQ001) or any future product candidates may be subject to limitations on the approved indicated uses for which the product may be marketed or to the conditions of approval, or contain requirements for potentially costly post-marketing testing, including Phase 4 clinical trials, and surveillance to monitor the safety and efficacy of the product candidate. In addition, if the FDA approves any product candidate, the manufacturing processes, labeling, packaging, distribution, adverse event reporting, storage, advertising, promotion, import, export and record keeping for the product 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 and GCPs, for any clinical trials that we conduct post-approval. Later discovery of previously unknown problems with a product, including adverse events of unanticipated severity or frequency, undesirable side effects caused by the product, problems encountered by our third-party manufacturers or manufacturing processes, or failure to comply with regulatory requirements, either before or after product approval, may result in, among other things:

- restrictions on the marketing or manufacturing of the product;
- requirements to include additional warnings on the label;
- requirements to create a medication guide outlining the risks to patients;
- withdrawal of the product from the market;
- voluntary or mandatory product recalls;
- requirements to change the way the product is administered or for us to conduct additional clinical trials;
- 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 our strategic partners, or suspension or revocation of product license 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
- harm to our reputation.

Additionally, if any product candidate receives marketing approval, the FDA could require us to adopt a REMS to ensure that the benefits of the therapy outweigh its risks, which may include, among other things, a medication guide outlining the risks for distribution to patients and a communication plan to health care practitioners. Any of these events could prevent us from achieving or maintaining market acceptance of the product or the particular product candidate at issue and could significantly harm our business, prospects, financial condition and results of operations.

In addition, if we have any product candidate approved, our product labeling, advertising and promotion will be subject to regulatory requirements and continuing regulatory review. The FDA strictly regulates the promotional claims that may be made about biopharmaceutical products. In particular, a product may not be promoted for uses that are not approved by the FDA as reflected in the product's approved labeling. However, companies may share truthful and not misleading information that is otherwise consistent with a product's FDA approved labeling. If we receive marketing approval for a product candidate, physicians may nevertheless prescribe it to their patients in a manner that is inconsistent with the approved label. If we are found to have promoted such off-label uses, we may become subject to significant liability. The FDA and other agencies actively enforce the laws and regulations prohibiting the promotion of off-label uses, and a company that is found to have improperly promoted off-label uses may be subject to significant sanctions. The federal government has levied large civil and criminal fines against companies for alleged improper promotion and has enjoined several companies from engaging in off-label promotion. The FDA has also requested that companies enter into consent decrees or permanent injunctions under which specified promotional conduct is changed or curtailed.

The FDA's policies may change and additional government regulations may be enacted that could prevent, limit or delay regulatory approval of itolizumab (EQ001) or any future 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, which would adversely affect our business, prospects, financial condition and results of operations.

Even if itolizumab (EQ001) receives marketing approval in any indication, it may fail to achieve the degree of market acceptance by physicians, patients, hospitals, cancer treatment centers, healthcare payors and others in the medical community necessary for commercial success.

If itolizumab (EQ001) receives marketing approval in any one or more indication, it may nonetheless fail to gain sufficient market acceptance by physicians, patients, third-party payors and others in the medical community. If itolizumab (EQ001) does not achieve an adequate level of acceptance, we may not generate significant product revenues and we may not become profitable. The degree of market acceptance of itolizumab (EQ001), if approved for commercial sale in any indication, will depend on a number of factors, including:

- efficacy and potential advantages compared to alternative treatments;
- our ability to offer itolizumab (EQ001) for sale at competitive prices;
- convenience and ease of administration compared to alternative treatments;
- the willingness of the target patient population to try new therapies and of physicians to prescribe these therapies;
- the strength of marketing and distribution support;
- potential product liability claims;
- the timing of market introduction of itolizumab (EQ001) as well as competitive biopharmaceutical products;
- the effectiveness of our or any of our potential future sales and marketing strategies;
- unfavorable publicity relating to itolizumab (EQ001);
- sufficient third-party payor coverage and adequate reimbursement;

- the willingness of patients to pay all, or a portion of, out-of-pocket costs associated with our products in the absence of sufficient third-party coverage and adequate reimbursement; and
- the prevalence and severity of any side effects.

We currently have no marketing and sales organization and have no experience as a company in commercializing products, and we may have to invest significant resources to develop these capabilities. If we are unable to establish marketing and sales capabilities or enter into agreements with third parties to market and sell itolizumab (EQ001), we may not be able to generate product revenue.

We have no internal sales, marketing or distribution capabilities, nor have we commercialized a product. If itolizumab (EQ001) ultimately receives regulatory approval, we may not be able to effectively market and distribute it. We may have to seek collaborators or invest significant amounts of financial and management resources to develop internal sales, distribution and marketing capabilities, some of which will be committed prior to any confirmation that itolizumab (EQ001) will be approved, if at all. We may not be able to enter into collaborations or hire consultants or external service providers to assist us in sales, marketing and distribution functions on acceptable financial terms, or at all. In addition, our product revenues and our profitability, if any, may be lower if we rely on third parties for these functions than if we were to market, sell and distribute itolizumab (EQ001) ourselves. We likely will have little control over such third parties, and any of them may fail to devote the necessary resources and attention to sell and market itolizumab (EQ001) effectively. Even if we determine to perform sales, marketing and distribution functions ourselves, we could face a number of additional related risks, including:

- we may not be able to attract and build an effective marketing department or sales force;
- the cost of establishing a marketing department or sales force may exceed our available financial resources and the revenue generated by itolizumab (EQ001); and
- our direct sales and marketing efforts may not be successful.

We face substantial competition, which may result in others discovering, developing or commercializing products more quickly or marketing them more successfully than us. If their product candidates are shown to be safer or more effective than ours, then our commercial opportunity will be reduced or eliminated.

The development and commercialization of new products is highly competitive. We compete in the segments of the pharmaceutical, biotechnology and other related markets that develop drugs and biologics for the treatment of immuno-inflammatory diseases. Our commercial opportunity could be reduced or eliminated if our 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, or that would render any products that we may develop obsolete or non-competitive. Our competitors also may obtain marketing approval for their products more rapidly than we may obtain approval for ours, which could result in our competitors establishing a strong market position before we are able to enter the market.

Other products addressing similar indications as itolizumab have already been approved or are further along in development. We are aware of both private and public companies with development programs in aGVHD, including Bristol-Myers Squibb Company, CSL Behring LLC, ElsaLys Biotech, Fate Therapeutics, Inc., Incyte Corporation, Jazz Pharmaceuticals plc, Kalytera Therapeutics, Inc., Kamada Ltd., Mesoblast Limited, Takeda Pharmaceutical Company Limited, and Xenikos B.V. Major, currently marketed asthma therapies include several biologic therapies that specifically target IgE or T_h 2-mediated cytokines such as IL-5 including products developed by AstraZeneca plc, GlaxoSmithKline plc, Genentech, Novartis AG, Regeneron Pharmaceuticals, Inc., Roche Holding AG, Sanofi-Genzyme, and Teva Pharmaceutical Industries Limited. In addition, Regeneron Pharmaceuticals, Inc. and Sanofi-Aventis U.S. LLC have received approval for dupilimab, an anti-IL-4 receptor antibody, as an add-on maintenance treatment in patients with moderate to severe asthma aged 12 years and older with an eosinophilic phenotype or with oral corticosteroid dependent asthma. We are aware of several companies with development programs in moderate to severe asthma, including Amgen Inc., AstraZeneca plc, GlaxoSmithKline plc, Gossamer Bio, Inc., Novartis AG, Regeneron Pharmaceuticals, Inc., Roche Holding AG and Sanofi-Aventis U.S. LLC. We are also aware of several companies with development programs targeting lupus nephritis including Alexion Pharmaceuticals, Inc, Apellis Pharmaceuticals, Inc., AstraZeneca plc, Aurinia Pharmaceuticals Inc., Boehringer Ingelheim GmbH, Genentech Inc., GlaxoSmithKline plc, Kezar Life Sciences, Inc., Novartis AG, and Omeros Corporation.

Many of our competitors, such as large pharmaceutical and biotechnology companies like Amgen Inc. and Bristol-Myers Squibb Company, have longer operating histories and significantly greater financial resources and expertise in research and development, manufacturing, preclinical studies, conducting clinical trials, obtaining regulatory approvals and marketing approved products than we have. In addition, these larger companies may be able to use their greater market power to obtain

more favorable distribution and sales-related agreements with third parties, which could give them a competitive advantage over us.

Further, as more product candidates within a particular class of biopharmaceutical products proceed through clinical development to regulatory review and approval, the amount and type of clinical data that may be required by regulatory authorities may increase or change. Consequently, the results of our clinical trials for product candidates in those classes will likely need to show a risk benefit profile that is competitive with or more favorable than those products and product candidates in order to obtain marketing approval or, if approved, a product label that is favorable for commercialization. If the risk benefit profile is not competitive with those products or product candidates, we may have developed a product that is not commercially viable, that we are not able to sell profitably or that is unable to achieve favorable pricing or reimbursement. In such circumstances, our future product revenues and financial condition would be materially and adversely affected.

Mergers and acquisitions in the pharmaceutical and biotechnology industries may result in even more resources being concentrated among a smaller number of our competitors. Smaller and other early stage companies may also prove to be significant competitors, particularly through collaborative arrangements with large and established companies. These third parties compete with us in recruiting and retaining qualified scientific and management personnel, establishing clinical trial sites and subject enrollment for clinical trials, as well as in acquiring technologies complementary to, or necessary for, itolizumab (EQ001) or any future programs.

The key competitive factors affecting the success of itolizumab (EQ001) are likely to be its efficacy, safety, convenience and availability of reimbursement. If we are not successful in developing, commercializing and achieving higher levels of reimbursement than our competitors, we will not be able to compete against them and our business would be materially harmed.

Itolizumab (EQ001) and any future product candidates for which we intend to seek approval as biologic products may face competition sooner than anticipated.

The Patient Protection and Affordable Care Act, as amended by the Health Care and Education Reconciliation Act of 2010, or collectively Affordable Care Act, signed into law on March 23, 2010, includes a subtitle called the BPCIA, which created an abbreviated approval pathway for biological products that are biosimilar to or interchangeable with an FDA-licensed reference biological product. Under the BPCIA, 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 the sponsor's own preclinical data and data from adequate and well-controlled clinical trials to demonstrate the safety, purity and potency of their product. The law is complex and is still being interpreted and implemented by the FDA. As a result, its ultimate impact, implementation and meaning are subject to uncertainty. While it is uncertain when such processes intended to implement BPCIA may be fully adopted by the FDA, any such processes could have a material adverse effect on the future commercial prospects for our biological products.

We believe that any of our product candidates approved as a biological product under a BLA should qualify for the 12-year period of exclusivity. However, there is a risk that this exclusivity could be shortened due to congressional action or otherwise, or that the FDA will not consider our product candidates to be reference products for competing products, potentially creating the opportunity for biosimilar competition sooner than anticipated. Other aspects of the BPCIA, some of which may impact the BPCIA exclusivity provisions, have also been the subject of recent litigation. Moreover, the extent to which a biosimilar, once approved, will be substituted for any one of our reference products in a way that is similar to traditional generic substitution for non-biological products is not yet clear, and will depend on a number of marketplace and regulatory factors that are still developing.

If the U.S. market opportunities for itolizumab (EQ001) are smaller than we believe they are, our revenue may be adversely affected and our business may suffer.

We only have the rights to itolizumab (EQ001) for the Equillium Territory, and we are focused on the development of itolizumab (EQ001) for immuno-inflammatory diseases, with an initial intention to develop it for the treatment of patients with aGVHD, lupus nephritis and uncontrolled moderate to severe asthma. Our projections of addressable patient populations in the Equillium Territory that have the potential to benefit from treatment with itolizumab (EQ001) are based on estimates and may prove to be incorrect. If any of our estimates are inaccurate, the market opportunities for itolizumab (EQ001) could be significantly diminished and have an adverse material impact on our business.

We may not ultimately realize the potential benefits of orphan drug designation for itolizumab (EQ001).

We received orphan drug designations for itolizumab (EQ001) for both the prevention and treatment of aGVHD. The FDA grants orphan designation to drugs that are intended to treat rare diseases with fewer than 200,000 patients in the United States or that affect more than 200,000 persons but are not expected to recover the costs of developing and marketing a treatment drug. Orphan drugs do not require prescription drug user fees with a marketing application, may qualify the drug development sponsor for certain tax credits, and may be eligible for a market exclusivity period of seven years (with certain exceptions). However, orphan drug designation neither shortens the development time nor regulatory review time of a product candidate nor gives the candidate any advantage in the regulatory review or approval process. Even if we are awarded marketing exclusivity, the FDA can still approve another drug containing the same active ingredient and used for the same orphan indication if it determines that a subsequent drug is safer, more effective or makes a major contribution to patient care, and orphan exclusivity can be lost if the orphan drug manufacturer is unable to assure that a sufficient quantity of the orphan drug is available to meet the needs of patients with the rare disease or condition. Orphan drug exclusivity may also be lost if the FDA later determines that the initial request for designation was materially defective. In addition, orphan drug exclusivity does not prevent the FDA from approving competing drugs for the same or similar indication containing a different active ingredient. If orphan drug exclusivity is lost and we were unable to successfully enforce any remaining patents covering our eligible product candidates, we could be subject to biosimilar competition earlier than we anticipate. In addition, if a subsequent drug is approved for marketing for the same or a similar indication as itolizumab (EQ001), we may face increased competition and lose market share regardless of orphan drug exclusivity.

Fast track designation by the FDA may not actually lead to a faster development or regulatory review or approval process.

We have received fast track designation for itolizumab (EQ001) for the treatment of aGVHD and lupus nephritis. If a product 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. Even with fast track designation, we may not experience a faster development process, review or approval compared to conventional FDA procedures. The FDA may withdraw fast track designation if it believes that the designation is no longer supported by data from our clinical development program.

Even if we receive marketing approval, we may not be able to successfully commercialize itolizumab (EQ001) due to unfavorable pricing regulations or third-party coverage and reimbursement policies, which could make it difficult for us to sell itolizumab (EQ001) or any future product candidates profitably.

Obtaining coverage and adequate reimbursement approval for a product from a government or other third-party payor is a time-consuming and costly process that could require us to provide supporting scientific, clinical and cost effectiveness data for the use of itolizumab (EQ001) or other future products to the payor. There may be significant delays in obtaining such coverage and reimbursement for newly approved products, and coverage may be more limited than the purposes for which the product is approved by the FDA. Moreover, eligibility for coverage and reimbursement does not imply that a product will be paid for in all cases or at a rate that covers our costs, including research, development, intellectual property, manufacture, sale and distribution expenses. Interim reimbursement levels for new products, if applicable, may also not be sufficient to cover our costs and may not be made permanent. Reimbursement rates may vary according to the use of the product and the clinical setting in which it is used, may be based on reimbursement levels already set for lower cost products and may be incorporated into existing payments for other services. Net prices for products may be reduced by mandatory discounts or rebates required by government healthcare programs or private payors, by any future laws limiting pharmaceutical prices and by any future relaxation of laws that presently restrict imports of product from countries where they may be sold at lower prices than in the United States.

There is significant uncertainty related to the insurance coverage and reimbursement of newly approved products. Third-party payors often rely upon Medicare coverage policy and payment limitations in setting reimbursement policies, but also have their own methods and approval process apart from Medicare coverage and reimbursement determinations. Decisions regarding the extent of coverage and amount of reimbursement to be provided for any product candidates that we develop will be made on a payor-by-payor basis. One third-party payor’s determination to provide coverage for a drug does not assure that other payors will also provide coverage and adequate reimbursement for the drug. Additionally, a third-party payor’s decision to provide coverage for a therapy does not imply that an adequate reimbursement rate will be approved. Third-party payors are increasingly challenging the price, examining the medical necessity and reviewing the cost-effectiveness of medical products, therapies and services, in addition to questioning their safety and efficacy.

Coverage and reimbursement by a third-party payor may depend upon a number of 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.

We cannot be sure that coverage or reimbursement will be available for any product that we commercialize and, if coverage and reimbursement are available, what the level of reimbursement will be. Obtaining adequate reimbursement for our products may be particularly difficult because of the higher prices often associated with branded therapeutics and therapeutics administered under the supervision of a physician. Similarly, because our product candidates are physician-administered injectables, separate reimbursement for the product itself may or may not be available. Instead, the administering physician may be reimbursed for providing the treatment or procedure in which our product is used. Our inability to promptly obtain coverage and adequate reimbursement rates from both government-funded and private payors for any approved products that we develop could have a material adverse effect on our operating results, our ability to raise capital needed to commercialize products and our overall financial condition.

Reimbursement may impact the demand for, and the price of, any product for which we obtain marketing approval. Assuming we obtain coverage 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. Each third-party payor determines whether or not it will provide coverage for a therapy, what amount it will pay the manufacturer for the therapy and on what tier of its list of covered drugs, or formulary, it will be placed. The position on a third-party payor's formulary, generally determines the co-payment that a patient will need to make to obtain the therapy and can strongly influence the adoption of such therapy by patients and physicians. 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 those medications. Patients are unlikely to use our products unless coverage is provided and reimbursement is adequate to cover all or a significant portion of the cost of our products. Therefore, coverage and adequate reimbursement is critical to new product acceptance. Coverage decisions may depend upon clinical and economic standards that disfavor new products when more established or lower cost therapeutic alternatives are already available or subsequently become available. Additionally, if we or our collaborators develop companion diagnostic tests for use with itolizumab (EQ001), such tests will be subject to the coverage and reimbursement process separate and apart from the coverage and reimbursement we seek for our itolizumab (EQ001).

We expect to experience pricing pressures in connection with the sale of itolizumab (EQ001) or any future 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 medicines, medical devices and surgical procedures and other treatments, has become very intense. As a result, increasingly high barriers are being erected to the successful commercialization of new products. Further, the adoption and implementation of any future governmental cost containment or other health reform initiative may result in additional downward pressure on the price that we may receive for any approved product.

Risks Related to Manufacturing and Our Reliance on Third Parties

The manufacture of biologics is complex and Biocon, our third-party manufacturer, may encounter difficulties in production, distribution and delivery of such biologics. If Biocon encounters such difficulties, our ability to provide supply of itolizumab (EQ001) for clinical trials, our ability to obtain marketing approval, or our ability to obtain commercial supply of our products, if approved, could be delayed or stopped.

We have no experience in biologic manufacturing and do not own or operate, and we do not expect to own or operate, facilities for product manufacturing, storage and distribution, or testing. We are completely dependent on Biocon to fulfill our clinical and commercial supply of itolizumab (EQ001). In May 2017, we entered into an exclusive clinical supply agreement with Biocon and have agreed to enter into an exclusive commercial supply agreement with Biocon in the future. Biocon manufactures itolizumab (EQ001) at its FDA regulated facility in Bangalore, India. However, the process of manufacturing biologics is complex, highly-regulated and subject to multiple risks. Manufacturing biologics is highly susceptible to product loss due to contamination, equipment failure, improper installation or operation of equipment, vendor or operator error, inconsistency in yields, variability in product characteristics and difficulties in scaling the production process. Even minor

deviations from normal manufacturing processes could result in reduced production yields, product defects and other supply disruptions and higher costs. If microbial, viral or other contaminations are discovered at the facilities of our manufacturer, such facilities may need to be closed for an extended period of time to investigate and remedy the contamination, which could delay clinical trials, result in higher costs of drug product and adversely harm our business. In addition, if the facilities of our manufacturer are located outside of the United States, as is the case for itolizumab (EQ001), the production, distribution and delivery of biologics is also subject to the laws and regulations of the country. Any changes in the laws and regulations of another country could delay clinical trials, result in higher costs of drug product and adversely harm our business. Moreover, if the FDA determines that our manufacturer is not in compliance with FDA laws and regulations, including those governing cGMPs, the FDA may deny BLA approval until the deficiencies are corrected or we replace the manufacturer in our BLA with a manufacturer that is in compliance.

In addition, there are risks associated with large scale manufacturing for clinical trials or commercial scale including, among others, cost overruns, potential problems with process scale-up, process reproducibility, stability issues, compliance with cGMPs, lot consistency and timely availability and delivery of raw materials. Even if we obtain regulatory approval for itolizumab (EQ001) or any future product candidates, there is no assurance that Biocon or other potential manufacturers will be able to manufacture the approved product to specifications acceptable to the FDA or other regulatory authorities, to produce it in sufficient quantities to meet the requirements for the potential launch of the product or to meet potential future demand. Further, our third-party manufacturers may experience manufacturing or shipping difficulties due to resource constraints or as a result of natural disasters, labor disputes, unstable political environments, or public health epidemics such as the recent COVID-19 outbreak. If our manufacturers are unable to produce sufficient quantities for clinical trials or for commercialization, commercialization efforts would be impaired, which would have an adverse effect on our business, financial condition, results of operations and growth prospects.

Scaling up a biologic manufacturing process is a difficult and uncertain task, and Biocon may not have the necessary capabilities to complete the implementation and development process of further scaling up production, transferring production to other sites, or managing its production capacity to timely deliver our supplies of itolizumab (EQ001) (or other biologics) or meet product demand. For example, in March 2020, due to the spread of the coronavirus, the Indian government restricted the export of 26 active pharmaceutical ingredients and the medicines made from them. These export restrictions are indefinite and may be expanded. If the export restrictions are expanded to include itolizumab (EQ001), our supply of itolizumab (EQ001) may be disrupted, delayed or stopped indefinitely and our ability to continue development of itolizumab (EQ001), including our ongoing clinical trials, may be significantly impacted and may result in higher costs of drug product and adversely harm our business. If Biocon is unable to meet our manufacturing requirements (due to export restrictions or otherwise), it has the discretion to outsource manufacturing to a third party and the joint steering committee may determine to shift manufacturing to a third party. However, transfer of the manufacturing of biologic products to a new contract manufacturer can be lengthy and involve significant additional costs. Even if we are able to adequately validate and scale-up the manufacturing process for itolizumab (EQ001) with a contract manufacturer, we will still need to negotiate with such contract manufacturer an agreement for commercial supply and it is not certain we will be able to come to agreement on terms acceptable to us, if at all. In addition, Biocon has certain rights to reacquire exclusive manufacturing rights for itolizumab (EQ001), even after a third party has been engaged following shortfalls by Biocon, which will may make it difficult and expensive to engage any third party manufacturer for itolizumab (EQ001) other than Biocon.

We rely, and intend to continue to rely, on third parties to conduct our clinical trials and perform some of our research and preclinical studies. If these third parties do not satisfactorily carry out their contractual duties, fail to comply with applicable regulatory requirements or meet expected deadlines, our development programs may be delayed or subject to increased costs or we may be unable to obtain regulatory approval, each of which may have an adverse effect on our business, financial condition, results of operations and prospects.

We do not have the ability to independently conduct all aspects of our preclinical testing or clinical trials ourselves. As a result, we are and will be dependent on third parties to conduct our ongoing and future clinical trials of itolizumab (EQ001) and preclinical studies, and any future preclinical studies and clinical trials of any other product candidates. The timing of the initiation and completion of these trials will therefore be partially controlled by such third parties and may result in delays to our development programs. Specifically, we expect CROs, clinical investigators and consultants to play a significant role in the conduct of these trials and the subsequent collection and analysis of data. However, we will not be able to control all aspects of their activities. Nevertheless, we are responsible for ensuring that each clinical trial is conducted in accordance with the applicable protocol and legal, regulatory and scientific standards, and our reliance on the CROs and other third parties does not relieve us of our regulatory responsibilities. We and our CROs are required to comply with GCP requirements, which are regulations and guidelines enforced by the FDA, for product candidates in clinical development. Regulatory authorities enforce these GCP requirements through periodic inspections of trial sponsors, clinical trial investigators and clinical trial sites. If we or any of our CROs or clinical trial sites fail to comply with applicable GCP requirements, the data generated in our clinical trials may be deemed unreliable, and the FDA may require us to perform additional clinical trials before approving our marketing

applications. In addition, our clinical trials must be conducted with product produced under cGMP regulations. Our failure to comply with these regulations may require us to stop and/or repeat clinical trials, which would delay the marketing approval process.

There is no guarantee that any such CROs, clinical trial investigators or other third parties on which we rely will devote adequate time and resources to our development activities or perform as contractually required. If any of these third parties fail to meet expected deadlines, adhere to our clinical protocols or meet regulatory requirements, otherwise performs in a substandard manner, or terminates its engagement with us, the timelines for our development programs may be extended or delayed or our development activities may be suspended or terminated. If our clinical trial site terminates for any reason, we may experience the loss of follow-up information on subjects enrolled in such clinical trial unless we are able to transfer those subjects to another qualified clinical trial site, which may be difficult or impossible. In addition, clinical trial investigators for our clinical trial may serve as scientific advisors or consultants to us from time to time and may receive cash or equity compensation in connection with such services. If these relationships and any related compensation result in perceived or actual conflicts of interest, or the FDA concludes that the financial relationship may have affected the interpretation of the trial, the integrity of the data generated at the applicable clinical trial site may be questioned and the utility of the clinical trial itself may be jeopardized, which could result in the delay or rejection of any marketing application we submit by the FDA. Any such delay or rejection could prevent us from commercializing itolizumab (EQ001) or any future product candidates.

Furthermore, these third parties may also have relationships with other entities, some of which may be our competitors for whom they may also be conducting clinical trials or other biopharmaceutical product development activities that could harm our competitive position. If these third parties do not successfully carry out their contractual duties, meet expected deadlines or conduct our clinical trials in accordance with regulatory requirements or our stated protocols, we will not be able to obtain, or may be delayed in obtaining, marketing approvals for itolizumab (EQ001) or any future product candidates and will not be able to, or may be delayed in our efforts to, successfully commercialize our products.

Our reliance on third parties requires us to share our trade secrets, which increases the possibility that a competitor will discover them or that our trade secrets will be misappropriated or disclosed.

Because we rely on third parties to research and develop and to manufacture itolizumab (EQ001), we must share trade secrets with them. We seek to protect our proprietary technology in part by entering into confidentiality agreements and, if applicable, material transfer agreements, consulting agreements or other similar agreements with our advisors, employees, third-party contractors and consultants prior to beginning research or disclosing proprietary information. These agreements typically limit the rights of the third parties to use or disclose our confidential information, including our trade secrets. Despite the contractual provisions employed when working with third parties, the need to share trade secrets and other confidential information increases the risk that such trade secrets become known by our competitors, are inadvertently incorporated into the technology of others, or are disclosed or used in violation of these agreements. Given that our proprietary position is based, in part, on our know-how and trade secrets, a competitor’s independent discovery of our trade secrets or other unauthorized use or disclosure would impair our competitive position and may have a material adverse effect on our business.

In addition, these agreements typically restrict the ability of our advisors, employees, third-party contractors and consultants to publish data potentially relating to our trade secrets, although our agreements may contain certain limited publication rights. For example, any academic institution that we may collaborate with will likely expect to be granted rights to publish data arising out of such collaboration and any joint research and development programs may require us to share trade secrets under the terms of our research and development or similar agreements. Despite our efforts to protect our trade secrets, our competitors may discover our trade secrets, either through breach of our agreements with third parties, independent development or publication of information by any of our third-party collaborators. A competitor’s discovery of our trade secrets would impair our competitive position and have an adverse impact on our business.

We may wish to acquire rights to future assets through in-licensing or may attempt to form collaborations in the future with respect to future product candidates, but may not be able to do so, which may cause us to alter or delay our development and commercialization plans.

The development and potential commercialization of itolizumab (EQ001) and any future product candidates will require substantial additional capital to fund expenses. We may, in the future, decide to collaborate with biotechnology companies for the development and potential commercialization of product candidates. We will face significant competition in seeking appropriate collaborators. We may not be successful in our efforts to establish a strategic partnership or other alternative arrangements for any product candidates because they may be deemed to be at too early of a stage of development for collaborative effort and third parties may not view such product candidates as having the requisite potential to demonstrate safety and efficacy. If and when we collaborate with a third party for development and commercialization of a product candidate, we can expect to relinquish some or all of the control over the future success of that product candidate to the third

party. Our ability to reach a definitive agreement for a collaboration will depend, among other things, upon our assessment of the collaborator's resources and expertise, the terms and conditions of the proposed collaboration and the proposed collaborator's evaluation of a number of factors. Those factors may include the following:

- the design or results of clinical trials;
- the likelihood of approval by the FDA or comparable foreign regulatory authorities;
- the potential market for the product candidate;
- the costs and complexities of manufacturing and delivering such product candidate to patients;
- the potential of competing products;
- the existence of uncertainty with respect to our ownership of technology or other rights, which can exist if there is a challenge to such ownership without regard to the merits of the challenge; and
- industry and market conditions generally.

The collaborator may also consider alternative product candidates or technologies for similar indications that may be available to collaborate on and whether such a collaboration could be more attractive than the one with us for our product candidate. We may also be restricted under any license agreements from entering into agreements on certain terms or at all with potential collaborators. Collaborations are complex and time-consuming to negotiate and document. In addition, there have been a significant number of recent business combinations among large pharmaceutical companies that have resulted in a reduced number of potential future collaborators and changes to the strategies of the combined company. As a result, we may not be able to negotiate collaborations on a timely basis, on acceptable terms, or at all. If we are unable to do so, we may have to curtail the development of such product candidate, reduce or delay one or more of our other development programs, delay the potential commercialization or reduce the scope of any planned sales or marketing activities for such product candidate, or increase our expenditures and undertake development, manufacturing or commercialization activities at our own expense. If we elect to increase our expenditures to fund development, manufacturing or commercialization activities on our own, we may need to obtain additional capital, which may not be available to us on acceptable terms or at all. If we do not have sufficient funds, we may not be able to further develop our future product candidates or bring them to market and generate product revenue. Even if we are successful in our efforts to establish such collaborations, the terms that we agree upon may not be favorable to us, and we may not be able to maintain such collaborations if, for example, development approval of a product candidate is delayed, the safety of a product candidate is questioned or sales of an approved product candidate are unsatisfactory.

Risks Related to Intellectual Property

If we are unable to obtain or protect intellectual property rights covering our product candidates, or if the scope of the intellectual property protection is not sufficiently broad, our competitors could develop and commercialize products similar or identical to ours, and we may not be able to compete effectively in our market.

Our success depends in significant part on our and Biocon's ability to establish, maintain and protect patents and other intellectual property rights with respect to our proprietary technologies, research programs, and product candidates, including itolizumab, and operate without infringing the intellectual property rights of others. The patent prosecution process is expensive and time-consuming, and we and our current or future licensors, licensees or partners 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 current and future licensors, licensees or partners will fail to identify patentable aspects of our research or inventions made in the course of development and commercialization activities before it is too late to obtain patent protection on them. Although we enter into confidentiality agreements with parties who have access to patentable aspects of our research and development programs, such as our employees, corporate collaborators, outside scientific collaborators, CROs, contract manufacturers, consultants, independent contractors, advisors and other third parties, any of these parties may breach these agreements and disclose such results before a patent application is filed, thereby jeopardizing our ability to seek patent protection on technology relating to our research programs. Moreover, 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 from or license to third parties and are reliant on our licensors, licensees or partners. Therefore, 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 partners 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 partners 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. There may be significant pressure

on the U.S. government and international governmental bodies to limit the scope of patent protection both inside and outside the United States for disease treatments that prove successful, as a matter of public policy regarding worldwide health concerns.

The patent position of biotechnology companies generally is highly uncertain, involves complex legal and factual questions and has in recent years been the subject of much litigation, resulting in court decisions, including Supreme Court decisions, which have increased uncertainties as to the ability to enforce patent rights in the future. In addition, the laws of foreign countries may not protect our rights to the same extent as the laws of the United States, allowing foreign competitors a better opportunity to create, develop and market competing product candidates, or vice versa. We cannot be certain that the claims in our pending patent applications directed to our product candidates such as itolizumab and others, as well as technologies relating to our research programs, will be considered patentable by the United States Patent and Trademark Office, or USPTO, or by patent offices in foreign countries. Furthermore, even if they are unchallenged, patents in our portfolio may not adequately exclude third parties from practicing relevant technology or prevent others from designing around our claims. As a result, the issuance, scope, validity, enforceability and commercial value of our and our current or future licensors', licensees' or partners' patent rights are highly uncertain. Our and our licensors', licensees' or partners' pending and future patent applications may not result in patents being issued, which protect our technology or products, in whole or in part, or their intended uses, methods of manufacture or formulations, or which effectively prevent others from commercializing competitive technologies and products. The patent examination process may require us or our licensors, licensees or partners to narrow the scope of the claims of our or our licensors', licensees' or partners' pending and future patent applications, which may limit the scope of patent protection that may be obtained. In the past, we have not always been able to obtain the full scope of patent protection we have initially sought in our patent applications, and as described above and as is typical for most biotechnology patent prosecution, we have been required to narrow or eliminate patent claims as part of the patent prosecution process. In addition, some patent applications that we or our licensors have filed have not resulted in issued patents because we or our licensors have abandoned those patent applications as changes in business and/or legal strategies dictated.

We cannot assure you that all of the potentially relevant prior art—information that was or is deemed available to a person of skill in the relevant art prior to the priority date of the claimed invention—relating to our patents and patent applications has been found. If such prior art exists, it can invalidate a patent or prevent a patent from issuing from a pending patent application, and we may be subject to a third party pre-issuance submission of prior art to the USPTO. Even if patents do successfully issue and even if such patents cover our product candidates, third parties may initiate litigation or opposition, interference, re-examination, post-grant review, inter partes review, nullification or derivation action in court or before patent offices, or similar proceedings challenging the validity, enforceability or scope of such patents, which may result in the patent claims being narrowed or invalidated, may allow third parties to commercialize our product candidates and compete directly with us, without payment to us, or limit the duration of the patent protection of our technology and products. The legal threshold for initiating such proceedings may be low, so that even proceedings with a low probability of success might be initiated. In addition, if the breadth or strength of protection provided by our patents and patent applications is threatened, regardless of the outcome, it could dissuade companies from collaborating with us to license, develop or commercialize current or future product candidates. Our and our licensors', licensees' or partners' 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 the technology.

Because patent applications in the United States and most other countries are confidential for a period of time after filing, and some remain so until issued, we cannot be certain that we or our licensors were the first to file any patent application related to our research programs and product candidates such as itolizumab. Even where we have a valid and enforceable patent, we may not be able to exclude others from practicing our invention where the other party can show that they used the invention in commerce before our filing date or the other party benefits from a compulsory license. In addition, 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. 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, we may be open to competition from competitive medications, including biosimilar or generic medications.

If we are not able to obtain patent term extension in the United States under the Hatch-Waxman Act and in foreign countries under similar legislation, thereby potentially extending the term of our marketing exclusivity for itolizumab or any other product candidates that we may identify, our business may be materially harmed.

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 portfolio may not provide us with sufficient rights to exclude others from commercializing products similar or identical to ours. We expect to seek extensions of patent terms where these are available in any countries where we are prosecuting patents. This includes in the United States under the Drug Price Competition and Patent Term Restoration Act of 1984, or Hatch-Waxman Act, which permits a patent term extension of up to five years beyond the expiration of the patent. The

Hatch-Waxman Act allows a maximum of one patent to be extended per FDA-approved product as compensation for the patent term lost during the FDA regulatory review process. A patent term extension cannot extend the remaining term of a patent beyond a total of 14 years from the date of product approval and only those claims covering such approved drug product, a method for using it or a method for manufacturing it may be extended. Patent term extension may also be available in certain foreign countries upon regulatory approval of our product candidates. However, the applicable authorities, including the FDA and USPTO, in the United States, and any equivalent foreign regulatory authority, may not agree with our assessment of whether such extensions are available, and may refuse to grant extensions to our patents, or may grant more limited extensions than we request. If this occurs, our competitors may take advantage of our investment in development and clinical trials by referencing our clinical and preclinical data and launch their product earlier than might otherwise be the case.

The degree of future protection for our proprietary rights is uncertain, and we cannot predict:

- if and when patents may issue based on our patent applications;
- the scope of protection of any patent issuing based on our patent applications;
- whether the claims of any patent issuing based on our patent applications will provide protection against competitors;
- whether any of the patents we own or license will be found to ultimately be valid and enforceable;
- whether or not third parties will find ways to invalidate or circumvent our patent rights;
- whether or not others will obtain patents claiming aspects similar to those covered by our patents and patent applications;
- whether the patents of others will not have an adverse effect on our business;
- whether we will develop additional proprietary technologies or products that are separately patentable;
- whether we will need to initiate litigation or administrative proceedings to enforce and/or defend our patent rights which will be costly whether we win or lose; and/or
- whether the patent applications that we own or in-license will result in issued patents with claims that cover our product candidates or uses thereof in the United States or in other foreign countries.

We depend on intellectual property licensed from Biocon and termination of our license could result in the loss of significant rights, which would harm our business.

We currently in-license certain intellectual property that is important to our business from Biocon and, in the future, we may enter into additional agreements that provide us with licenses to valuable intellectual property or technology. We rely to some extent on Biocon to file patent applications and to otherwise protect the intellectual property we license from them. We have limited control over these activities or any other intellectual property that may be related to our in-licensed intellectual property. For example, we cannot be certain that such activities by Biocon have been or will be conducted in compliance with applicable laws and regulations or will result in valid and enforceable patents and other intellectual property rights. We have limited control over the manner in which Biocon initiates an infringement proceeding against a third-party infringer of the intellectual property rights, or defend certain of the intellectual property that is licensed to us. It is possible that our licensor's infringement proceeding or defense activities may be less vigorous than had we conducted them ourselves.

Furthermore, in-licensed patents may be subject to a reservation of rights by one or more third parties. Further, our existing license with Biocon imposes, and future agreements may also impose, various diligence, milestone payment, royalty, insurance and other obligations on us. If we fail to comply with these obligations, we may be required to pay damages and our licensor may have the right to terminate the license, in which event we would not be able to develop or market the products covered by such licensed intellectual property and our competitors or other third parties might be able to gain access to technologies and products that are identical to ours. Our business would suffer if any current or future licenses terminate, if the licensors fail to abide by the terms of the license, if the licensors fail to enforce licensed patents against infringing 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. Furthermore, if any current or future licenses terminate, or if the underlying patents fail to provide the intended exclusivity, competitors or other third parties may gain the freedom to seek regulatory approval of, and to market, products identical to ours. Moreover, our licensors may own or control intellectual property that has not been licensed to us and, as a result, we may be subject to claims, regardless of their merit, that we are infringing or otherwise violating the licensor's rights. Disputes may also arise between us and our licensor regarding intellectual property subject to a license agreement, including those relating to:

- 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 license agreement;
- our right to sublicense patent and other rights to third parties under collaborative development relationships;
- whether we are complying with our diligence obligations with respect to the use of the licensed technology in relation to our development and commercialization of our product candidates; and
- the allocation of ownership of inventions and know-how resulting from the joint creation or use of intellectual property by our licensors and by us and our partners.

In addition, intellectual property or technology license agreements, including our existing agreements, are complex, and certain provisions in such agreements may be susceptible to multiple interpretations. 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 have a material adverse effect on our business, financial condition, results of operations, and prospects. 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 are generally also subject to all of the same risks with respect to protection of intellectual property that we license as we are for intellectual property that we own, which are described below. If we or our licensor fail to adequately protect this intellectual property, our ability to commercialize products could suffer.

Because our programs may require the use of proprietary rights held by third parties, the growth of our business may depend in part on our ability to acquire, in-license or use these proprietary rights. We may be unable to acquire or in-license any compositions, methods of use, processes or other third-party intellectual property rights from third parties that we identify as necessary for our product candidates. The licensing and acquisition of third-party intellectual property rights is a competitive area, and a number of more established companies are also pursuing strategies to license or acquire third-party intellectual property rights that we may consider attractive. These established companies may have a competitive advantage over us due to their size, cash resources and greater clinical development and commercialization capabilities.

In addition, companies that perceive us to be a competitor may be unwilling to assign or license rights to us. We also may be unable to license or acquire third-party intellectual property rights on terms that would allow us to make an appropriate return on our investment. In addition, while we cannot currently determine the amount of the royalty obligations we would be required to pay on sales of future products, if any, the amounts may be significant. The amount of our future royalty obligations will depend on the technology and intellectual property we use in products that we successfully develop and commercialize, if any. Therefore, even if we successfully develop and commercialize products, we may be unable to achieve or maintain profitability.

In the future, we may need to obtain additional licenses of third-party technology that may not be available to us or are available only on commercially unreasonable terms, and which may cause us to operate our business in a more costly or otherwise adverse manner that was not anticipated.

From time to time we may be required to license technologies relating to our therapeutic research programs from additional third parties to further develop or commercialize our product candidates such as itolizumab and/or others. Should we be required to obtain licenses to any third-party technology, including any such patents required to manufacture, use or sell our product candidates, such licenses may not be available to us on commercially reasonable terms, or at all. The inability to obtain any third-party license required to develop or commercialize any of our product candidates could cause us to abandon any related efforts, which could seriously harm our business and operations.

Any collaboration arrangements that we may enter into in the future may not be successful, which could adversely affect our ability to develop and commercialize our products.

Any future collaborations that we enter into may not be successful. The success of our collaboration arrangements will depend heavily on the efforts and activities of our collaborators. Collaborations are subject to numerous risks, which may include that:

- collaborators have significant discretion in determining the efforts and resources that they will apply to collaborations;
- collaborators may not pursue development and commercialization of our products or may elect not to continue or renew development or commercialization programs based on trial or test results, changes in their strategic focus due to the acquisition of competitive products, availability of funding or other external factors, such as a business combination that diverts resources or creates competing priorities;

- collaborators could independently develop, or develop with third parties, products that compete directly or indirectly with our products or product candidates;
- a collaborator with marketing, manufacturing and distribution rights to one or more products may not commit sufficient resources to or otherwise not perform satisfactorily in carrying out these activities;
- we could grant exclusive rights to our collaborators that would prevent us from collaborating with others;
- collaborators may not properly maintain or defend our intellectual property rights or may use our intellectual property or proprietary information in a way that gives rise to actual or threatened litigation that could jeopardize or invalidate our intellectual property or proprietary information or expose us to potential liability;
- disputes may arise between us and a collaborator that causes the delay or termination of the research, development or commercialization of our current or future products or that results in costly litigation or arbitration that diverts management attention and resources;
- collaborations may be terminated, and, if terminated, may result in a need for additional capital to pursue further development or commercialization of the applicable current or future products;
- collaborators may own or co-own intellectual property covering our products that results from our collaborating with them, and in such cases, we would not have the exclusive right to develop or commercialize such intellectual property; and
- a collaborator's sales and marketing activities or other operations may not be in compliance with applicable laws resulting in civil or criminal proceedings.

We may not identify relevant third-party patents or may incorrectly interpret the relevance, scope or expiration of a third party patent, which might adversely affect our ability to develop and market our products.

We cannot assure you that our operations do not, or will not in the future, infringe existing or future patents. We cannot guarantee that any of our patent searches or analyses, including the identification of relevant patents, the scope of patent claims or the expiration of relevant patents, are complete or thorough, nor can we be certain that we have identified each and every third party patent and pending application in the United States and abroad that is relevant to our therapeutic research programs or necessary for the commercialization of our product candidates such as itolizumab and/or others in any jurisdiction.

Numerous U.S. and foreign patents and pending patent applications exist in our market that are owned by third parties, and there may be third-party patents or patent applications with claims to materials, formulations, methods of manufacture or methods for treatment related to the use or manufacture of itolizumab that we may identify. Our competitors in both the United States and abroad, many of which have substantially greater resources and have made substantial investments in patent portfolios and competing technologies, may have applied for or obtained or may in the future apply for and obtain, patents that will prevent, limit or otherwise interfere with our ability to make, use and sell our products. We do not always conduct independent reviews of pending patent applications of and patents issued to third parties. Patent applications in the United States and elsewhere are typically published approximately 18 months after the earliest filing for which priority is claimed, with such earliest filing date being commonly referred to as the priority date. Certain U.S. applications that will not be filed outside the United States can remain confidential until patents issue. In addition, patent applications in the United States and elsewhere can be pending for many years before issuance, or unintentionally abandoned patents or applications can be revived. Furthermore, pending patent applications that have been published can, subject to certain limitations, be later amended in a manner that could cover our technologies, our products or the use of our products. As such, there may be applications of others now pending or recently revived patents of which we are unaware, potentially relating to our research programs and product candidates such as itolizumab and others, or their intended uses. These applications may later result in issued patents, or the revival of previously abandoned patents, that will prevent, limit or otherwise interfere with our ability to make, use or sell our products.

The scope of a patent claim is determined by an interpretation of the law, the written disclosure in a patent and the patent's prosecution history. Our interpretation of the relevance or the scope of a patent or a pending application may be incorrect, which may negatively impact our ability to market our products. We may incorrectly determine that our products are not covered by a third party patent or may incorrectly predict whether a third party's pending application will issue with claims of relevant scope. Our determination of the expiration date of any patent in the United States or abroad that we consider relevant may be incorrect, which may negatively impact our ability to develop and market our product candidates. Our failure to identify and correctly interpret relevant patents may negatively impact our ability to develop and market our products.

We cannot provide any assurances that third party patents do not exist which might be enforced against our current technology, including our research programs, product candidates, which include itolizumab and others, their respective methods of use, manufacture and formulations thereof, and could result in either an injunction prohibiting our manufacture or future sales, or, with respect to our future sales, an obligation on our part to pay royalties and/or other forms of compensation to third parties, which could be significant.

If we are sued for infringing intellectual property rights of third parties, such litigation could be costly and time consuming and could prevent or delay us from developing or commercializing our product candidates.

Our commercial success depends, in part, on our ability to develop, manufacture, market and sell itolizumab and other potential future product candidates without infringing the intellectual property and other proprietary rights of third parties. Third parties may allege that we have infringed or misappropriated their intellectual property. Litigation or other legal proceedings relating to intellectual property claims, with or without merit, is unpredictable and generally expensive and time consuming and, even if resolved in our favor, is likely to divert significant resources from our core business, including distracting 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 market price of our common stock. 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 adequately conduct such litigation or proceedings. 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 and more mature and developed intellectual property portfolios. Uncertainties resulting from the initiation and continuation of patent litigation or other proceedings could have a material adverse effect on our ability to compete in the marketplace. We cannot assure you that our operations do not, or will not in the future, infringe existing or future patents.

There is a substantial amount of intellectual property litigation in the biotechnology and pharmaceutical industries, and we may become party to, or threatened with, litigation or other adversarial proceedings regarding intellectual property rights with respect to our product candidates. Our competitors in both the United States and abroad, many of which have substantially greater resources and have made substantial investments in patent portfolios and competing technologies, may have applied for or obtained or may in the future apply for and obtain, patents that will prevent, limit or otherwise interfere with our ability to make, use and sell our product candidates. Third parties may assert infringement claims against us based on existing or future intellectual property rights. The pharmaceutical and biotechnology industries have produced a significant number of patents, and it may not always be clear to industry participants, including us, which patents cover various types of products or methods of use. The coverage of patents is subject to interpretation by the courts, and the interpretation is not always uniform. If we were sued for patent infringement, we would need to demonstrate that our product candidates, products or methods either do not infringe the patent claims of the relevant patent or that the patent claims are invalid or unenforceable, and we may not be able to do this. Proving invalidity may be difficult. For example, in the United States, proving invalidity in court requires a showing of clear and convincing evidence to overcome the presumption of validity enjoyed by issued patents. Even if we are successful in these proceedings, we may incur substantial costs and the time and attention of our management and scientific personnel could be diverted in pursuing these proceedings, which could have a material adverse effect on our business and operations. In addition, we may not have sufficient resources to bring these actions to a successful conclusion. Furthermore, because of the substantial amount of discovery required in connection with intellectual property litigation or administrative proceedings, there is a risk that some of our confidential information could be compromised by disclosure.

If we are found to infringe a third party's intellectual property rights, we could be forced, including by court order, to cease developing, manufacturing or commercializing the infringing product candidate or product. Alternatively, we may be required to obtain a license from such third party in order to use the infringing technology and continue developing, manufacturing or marketing the infringing product candidate. However, we may not be able to obtain any required license on commercially reasonable terms or at all. Even if we were able to obtain a license, it could be non-exclusive, thereby giving our competitors access to the same technologies licensed to us. In addition, we could be found liable for monetary damages, including treble damages and attorneys' fees if we are found to have willfully infringed a patent. A finding of infringement could prevent us from commercializing our product candidates or force us to cease some of our business operations, and could divert the time and attention of our technical personnel and management, cause development delays, and/or require us to develop non-infringing technology, which may not be possible on a cost-effective basis, which could materially harm our business. Claims that we have misappropriated the confidential information or trade secrets of third parties could have a similar negative impact on our business.

We may become involved in lawsuits to protect or enforce our patents or other intellectual property, which could be expensive, time consuming and unsuccessful.

Competitors may infringe our patents, trademarks, copyrights or other intellectual property that relate to our current and future product candidates, including itolizumab and others, their respective methods of use, manufacture and formulations thereof. To counter infringement or unauthorized use, we or our licensor may be required to file infringement claims, which can be expensive and time consuming and divert the time and attention of our management and scientific personnel. Any claims we or our licensor assert against perceived infringers could provoke these parties to assert counterclaims against us alleging that we infringe their patents, in addition to counterclaims asserting that our patents are invalid or unenforceable, or both. In patent litigation in the United States, defendant counterclaims alleging invalidity and/or unenforceability are commonplace, and the outcome following legal assertions of invalidity and unenforceability is unpredictable. In any patent infringement proceeding, there is a risk that a court will decide that a patent that we own or have licensed is invalid or unenforceable, in whole or in part, and that we do not have the right to stop the other party from using the invention at issue. There is also a risk that, even if the validity of such patents is upheld, the court will construe the patent's claims narrowly or decide that we do not have the right to stop the other party from using the invention at issue on the grounds that our patent claims do not cover the invention. An adverse outcome in a litigation or proceeding involving our patents could limit our ability to assert our patents against those parties or other competitors and may curtail or preclude our ability to exclude third parties from making and selling similar or competitive products.

Interference or derivation 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. For example, 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 harmed if the prevailing party does not offer us a license on commercially reasonable terms or at all, or if a non-exclusive license is offered and our competitors gain access to the same technology. Our defense of litigation or interference or derivation proceedings may fail and, even if successful, may result in substantial costs and distract our management and other employees. In addition, the uncertainties associated with litigation could have a material adverse effect on 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 partnerships that would help us bring itolizumab or other product candidates that we may identify to market. Any of these occurrences could adversely affect our competitive business position, results of operations business prospects and financial condition. Similarly, if we assert trademark infringement claims, a court may determine that the marks we have asserted are invalid or unenforceable, or that the party against whom we have asserted trademark infringement has superior rights to the marks in question. In this case, we could ultimately be forced to cease use of such trademarks.

Even if we establish infringement, the court may decide not to grant an injunction against further infringing activity and instead award only monetary damages, which may or may not be an adequate remedy. 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 litigation. There could also be public announcements of the results of hearings, motions or other interim proceedings or developments. If securities analysts or investors perceive these results to be negative, it could have a material adverse effect on the price of shares of our common stock. Moreover, we cannot assure you that we will have sufficient financial or other resources to file and pursue such infringement claims, which typically last for years before they are concluded. Even if we ultimately prevail in such claims, the monetary cost of such litigation and the diversion of the attention of our management and scientific personnel could outweigh any benefit we receive as a result of the proceedings.

Because of the expense and uncertainty of litigation, we may not be in a position to enforce our intellectual property rights against third parties.

Because of the expense and uncertainty of litigation, we may conclude that even if a third party is infringing our issued patent relating to our research programs and product candidates, any patents that may be issued as a result of our pending or future patent applications or other intellectual property rights, the risk-adjusted cost of bringing and enforcing such a claim or action may be too high or not in the best interest of our company or our stockholders. In such cases, we may decide that the more prudent course of action is to simply monitor the situation or initiate or seek some other non-litigious action or solution.

We may be subject to claims that our employees, consultants or independent contractors have wrongfully used or disclosed confidential information of third parties.

We employ individuals who previously worked with other companies, including our competitors or potential competitors. We could in the future be subject to claims that we or our employees, consultants, or independent contractors have inadvertently or otherwise used or disclosed alleged trade secrets or other confidential information of current or former employers or

competitors. Although we try to ensure that our employees, consultants and independent contractors do not use the intellectual property, proprietary information, know-how or trade secrets of others in their work for us, we may become subject to claims that we caused an individual to breach the terms of his or her non-competition or non-solicitation agreement, or that we or these individuals have, inadvertently or otherwise, used or disclosed the alleged trade secrets or other proprietary information of a current or former employer or competitor.

While we may litigate to defend ourselves against these claims, even if we are successful, litigation could result in substantial costs and could be a distraction to management and other employees. If our defenses to these claims fail, in addition to requiring us to pay monetary damages, a court could prohibit us from using technologies or features that are essential to our product candidates, including itolizumab, if such technologies or features are found to incorporate or be derived from the trade secrets or other proprietary information of the current or former employers. Moreover, any such litigation or the threat thereof may adversely affect our reputation, our ability to form strategic alliances or sublicense our rights to collaborators, engage with scientific advisors or hire employees or consultants, each of which would have an adverse effect on our business, results of operations and financial condition.

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

Filing, prosecuting and defending all current and future patents 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 products and, further, may export otherwise infringing products to territories where we have patent protection but enforcement is not as strong as that in the United States. These products 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.

The legal systems of many foreign 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 or marketing of competing products in violation of our proprietary rights. For example, some foreign countries have compulsory licensing laws under which a patent owner must grant licenses to third parties. In addition, some countries limit the enforceability of patents against third parties, including government agencies or government contractors. In these countries, patents may provide limited or no benefit. 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. 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.

Obtaining and maintaining patent protection depends on compliance with various procedural, document submissions, 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, annuities fees and various other governmental fees on patents and/or patent applications are due to be paid to the USPTO and foreign patent agencies in several stages over the lifetime of the patent and/or patent application. The USPTO and various foreign governmental patent agencies also require compliance with a number of procedural, documentary, fee payment and other similar provisions during the patent application process. While an inadvertent lapse can in many cases be cured by payment of a late fee or by other means in accordance with the applicable rules, there are situations in which noncompliance 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. Non-compliance events that could result in abandonment or lapse of a patent or patent application include, but are not limited to, failure to respond to official actions within prescribed time limits, non-payment of fees and failure to properly legalize and submit formal documents. If we fail to maintain the patents and patent applications covering our research programs and product candidates such as itolizumab and others as well as their respective methods of use, manufacture and formulations thereof, our competitive position would be adversely affected, as, for example, competitors might be able to enter the market earlier than would otherwise have been the case.

We may rely on trade secret and proprietary know-how which can be difficult to trace and enforce and, if we are unable to protect the confidentiality of our trade secrets, our business and competitive position would be harmed.

In addition to seeking patents for some of our technology and product candidates, we may also rely on trade secrets, including unpatented know-how, technology and other proprietary information, to maintain our competitive position with respect to our research programs and product candidates. Elements of our product candidates, including processes for their preparation and manufacture, may involve proprietary know-how, information, or technology that is not covered by patents, and thus for these aspects we may consider trade secrets and know-how to be our primary intellectual property. Any disclosure, either intentional or unintentional, by our employees, the employees of third parties with whom we share our facilities or third party consultants and vendors that we engage to perform research, clinical trials or manufacturing activities, or misappropriation by third parties (such as through a cybersecurity breach) of our trade secrets or proprietary information could enable competitors to duplicate or surpass our technological achievements, thus eroding our competitive position in our market.

Trade secrets and know-how can be difficult to protect. We require our employees to enter into written employment agreements containing provisions of confidentiality and obligations to assign to us any inventions generated in the course of their employment. We and any third parties with whom we share facilities enter into written agreements that include confidentiality and intellectual property obligations to protect each party's property, potential trade secrets, proprietary know-how, and information. We further seek to protect our potential trade secrets, proprietary know-how, and information in part, by entering into non-disclosure and confidentiality agreements with parties who are given access to them, such as our corporate collaborators, outside scientific collaborators, CROs, contract manufacturers, consultants, advisors and other third parties. With our consultants, contractors, and outside scientific collaborators, these agreements typically include invention assignment obligations. However, we cannot be certain that such agreements have been entered into with all relevant parties, and we cannot be certain that our trade secrets and other confidential proprietary information will not be disclosed or that competitors will not otherwise gain access to our trade secrets or independently develop substantially equivalent information and techniques. Moreover, 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. Monitoring unauthorized uses and disclosures is difficult, and we do not know whether the steps we have taken to protect our proprietary technologies will be effective. Unauthorized parties may also attempt to copy or reverse engineer certain aspects of our products that we consider proprietary. 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.

Trade secrets may be independently developed by others in a manner that could prevent legal recourse by us. Trade secrets will over time be disseminated within the industry through independent development, the publication of journal articles and the movement of personnel skilled in the art from company to company or academic to industry scientific positions. Though our agreements with third parties typically restrict the ability of our advisors, employees, collaborators, licensors, suppliers, third-party contractors and consultants to publish data potentially relating to our trade secrets, our agreements may contain certain limited publication rights. Because from time to time we expect to rely on third parties in the development, manufacture, and distribution of our products and provision of our services, we must, at times, share trade secrets with them. Despite employing the contractual and other security precautions described above, the need to share trade secrets increases the risk that such trade secrets become known by our competitors, are inadvertently incorporated into the technology of others, or are disclosed or used in violation of these agreements. 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 harmed.

We may become subject to claims challenging the inventorship or ownership of our patents and other intellectual property.

We or our licensor may be subject to claims that former employees, consultants, independent contractors, collaborators or other third parties have an interest in our patents or other intellectual property as an owner, co-owner, inventor or co-inventor. The failure to name the proper inventors on a patent application can result in the patents issuing thereon being unenforceable. Inventorship disputes may arise from conflicting views regarding the contributions of different individuals named as inventors, the effects of foreign laws where foreign nationals are involved in the development of the subject matter of the patent, conflicting obligations of third parties involved in developing our product candidates or as a result of questions regarding co-ownership of potential joint inventions. Litigation may be necessary to resolve these and other claims challenging inventorship and/or ownership. Alternatively, or additionally, we may enter into agreements to clarify the scope of our rights in such intellectual property. 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.

Patent terms may be inadequate to protect our competitive position on our product candidates for an adequate amount of time.

Patent rights are of limited duration. In the United States, the natural expiration of a patent is generally 20 years after its first effective non-provisional filing date. 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 product candidates are commercialized. Even if patents covering our product candidates are obtained, once the patent life has expired for a product, we may be open to competition from biosimilar or generic products. A patent term extension based on regulatory delay may be available in the United States. However, only a single patent can be extended for each marketing approval, and any patent can be extended only once, for a single product. Moreover, the scope of protection during the period of the patent term extension does not extend to the full scope of the claim, but instead only to the scope of the product as approved. Laws governing analogous patent term extensions in foreign jurisdictions vary widely, as do laws governing the ability to obtain multiple patents from a single patent family. Additionally, we may not receive an extension if we fail to apply within applicable deadlines, fail to apply prior to expiration of relevant patents or otherwise fail to satisfy applicable requirements. If we are unable to obtain patent term extension or restoration, or the term of any such extension is less than we request, the period during which we will have the right to exclusively market our product will be shortened and our competitors may obtain approval of competing products following our patent expiration, and our revenue could be reduced, possibly materially.

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

We currently have two U.S. trademark registrations for EQUILLIUM respectively covering Classes 5 and 42, and one Canadian trademark registration for EQUILLIUM covering both Classes 5 and 42. Our current or future trademarks or trade names may be challenged, infringed, circumvented or declared generic or descriptive determined to be infringing on other marks. 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 trademark registration proceedings, we may receive rejections. Although we would be given an opportunity to respond to those rejections, 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 to seek to cancel 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 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. We may license our trademarks and trade names to third parties, such as distributors. Though these license agreements may provide guidelines for how our trademarks and trade names may be used, a breach of these agreements or misuse of our trademarks and tradenames by our licensees may jeopardize our rights in or diminish the goodwill associated with our trademarks and trade names.

Intellectual property rights do not necessarily address all potential threats to our competitive advantage.

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 product candidates that are similar to ours but that are not covered by the claims of the patents that we own or have exclusively licensed;
- we or our licensors or future collaborators might not have been the first to make the inventions covered by the issued patent or pending patent application that we own or have exclusively licensed;
- we or our licensors or future collaborators might not have been the first to file patent applications covering certain of our inventions;
- others may independently develop similar or alternative technologies or duplicate any of our technologies without infringing our intellectual property rights;
- it is possible that our pending patent applications will not lead to issued patents;
- issued patents that we own or have exclusively licensed may be held invalid or unenforceable, 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; and
- the patents of others may have an adverse effect on our business.

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

Risks Related to Employees, Managing Our Growth and Other Legal Matters

We are highly dependent on the services of our key personnel.

We are highly dependent on the services of our key personnel, Bruce D. Steel, who serves as our President and Chief Executive Officer, Stephen Connelly, Ph.D., who serves as our Chief Scientific Officer and Dolca Thomas, M.D., who serves as our Executive Vice President Research & Development and Chief Medical Officer. Although we have entered into agreements with them regarding their employment, they are not for a specific term and each of them may terminate their employment with us at any time, though we are not aware of any present intention of any of these individuals to leave us.

We expect to expand our development, regulatory and operational capabilities and, as a result, we may encounter difficulties in managing our growth, which could disrupt our operations.

As of December 31, 2020, we had 31 full-time employees. As we advance itolizumab (EQ001) in clinical development, we expect to experience significant growth in the number of our employees and the scope of our operations, particularly in the areas of clinical development, quality, regulatory affairs and, if itolizumab (EQ001) or any future product candidates receive marketing approval, sales, marketing and distribution. To manage our anticipated future growth, we must:

- identify, recruit integrate, maintain and motivate additional qualified personnel;
- identify and lease additional facilities;
- manage our development efforts effectively, including the initiation and conduct of clinical trials for itolizumab (EQ001) and any future product candidates; and
- improve our operational, financial and management controls, reporting systems and procedures.

Our future financial performance and our ability to develop, manufacture and commercialize itolizumab (EQ001) and any future product candidates will depend, in part, on our ability to effectively manage any future growth, and our management may also have to divert financial and other resources, and 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 third party contract organizations, advisors and consultants to provide certain services, including assuming substantial responsibilities for the conduct of our ongoing and future clinical trials and the manufacture of itolizumab (EQ001) and any future product candidates. We cannot assure you that the services of such third party contract 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 our vendors or consultants is compromised for any reason, our clinical trials may be extended, delayed or terminated, and we may not be able to obtain marketing approval of our product candidates or otherwise advance our business. We cannot assure you that we will be able to properly manage our existing vendors or consultants or find other competent outside vendors and consultants on economically reasonable terms, or at all.

If we are not able to effectively expand our organization by leasing additional facilities, 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 commercialize itolizumab (EQ001) and any future product candidates and, accordingly, may not achieve our research, development and commercialization goals.

Our employees, clinical trial investigators, CROs, consultants, vendors and any potential commercial partners may engage in misconduct or other improper activities, including non-compliance with regulatory standards and requirements and insider trading.

We are exposed to the risk of fraud or other misconduct by our employees, clinical trial investigators, CROs, consultants, vendors and any potential commercial partners. Misconduct by these parties could include intentional, reckless and/or negligent conduct or disclosure of unauthorized activities to us that violates: (i) FDA laws and regulations or those of comparable foreign

regulatory authorities, including those laws that require the reporting of true, complete and accurate information, (ii) manufacturing standards, (iii) federal and state health and data privacy, security, fraud and abuse, government price reporting, transparency reporting requirements, and other healthcare laws and regulations in the United States and abroad, (iv) sexual harassment and other workplace misconduct, or (v) laws that require the true, complete and accurate reporting of financial information or data. Such misconduct could also involve the improper use of information obtained in the course of clinical trials, which could result in regulatory sanctions and cause serious harm to our reputation. We have adopted a code of conduct applicable to all of our employees, as well as a disclosure program and other applicable policies and procedures, but 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 comply with these 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 civil, criminal and administrative penalties, damages, fines, disgorgement, imprisonment, exclusion from government funded healthcare programs, such as Medicare, Medicaid and other federal healthcare programs, contractual damages, reputational harm, diminished profits and future earnings, additional integrity reporting and oversight obligations, 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.

Our internal information technology systems, or those of our third-party CROs or other contractors or consultants, may fail or suffer security breaches, loss or leakage of data and other disruptions, which could result in a material disruption of our development programs, compromise sensitive information related to our business or prevent us from accessing critical information, potentially exposing us to liability or otherwise adversely affecting our business.

We are increasingly dependent upon information technology systems, infrastructure and data to operate our business. As a result of the social distancing and remote working requirements related to the COVID-19 pandemic, we now have an even greater reliance on information technology and the effective functioning of our communication systems. In the ordinary course of business, we collect, store and transmit confidential information (including but not limited to intellectual property, proprietary business information and personal information). It is critical that we do so in a secure manner to maintain the confidentiality and integrity of such confidential information. We also have outsourced elements of our operations to third parties, and as a result we manage a number of third party contractors who have access to our confidential information.

Despite the implementation of security measures, given their size and complexity and the increasing amounts of confidential information that they maintain, our internal information technology systems and those of our third-party CROs and other contractors and consultants are potentially vulnerable to breakdown or other damage or interruption from service interruptions, system malfunction, natural disasters, terrorism, war and telecommunication and electrical failures, as well as security breaches from inadvertent or intentional actions by our employees, contractors, consultants, business partners, and/or other third parties, or from cyber-attacks by malicious third parties (including the deployment of harmful malware, ransomware, denial-of-service attacks, social engineering and other means to affect service reliability and threaten the confidentiality, integrity and availability of information), which may compromise our system infrastructure or lead to data leakage. Changes in how our employees work and access our systems during the COVID-19 pandemic could lead to additional opportunities for bad actors to launch cyber-attacks or for employees to cause inadvertent security risks or incidents. To the extent that any accidental or intentional disruption or security breach were to result in a loss of, or damage to, our data or applications, or inappropriate disclosure of confidential or proprietary information, we could incur liability and reputational damage and the further development and commercialization of itolizumab (EQ001) or any future product candidates could be delayed. The effects of a disruption or security breach could be further amplified during the current COVID-19 pandemic.

While we have not experienced any such system failure, accident or security breach to date, we cannot assure you that our data protection efforts and our investment in information technology will prevent significant breakdowns, data leakages, breaches in our systems or other cyber incidents that could have a material adverse effect upon our reputation, business, operations or financial condition. For example, if such an event were to occur and cause interruptions in our operations, it could result in a material disruption of our programs and the development of itolizumab (EQ001) or any future product candidates could be delayed. In addition, the loss of clinical trial data for itolizumab (EQ001) or any future product candidates could result in delays in our marketing approval efforts and significantly increase our costs to recover or reproduce the data. Furthermore, significant disruptions of our internal information technology systems or security breaches could result in the loss, misappropriation, and/or unauthorized access, use, or disclosure of, or the prevention of access to, confidential information (including trade secrets or other intellectual property, proprietary business information, and personal information), which could result in financial, legal, business, and reputational harm to us. For example, any such event that leads to unauthorized access, use, or disclosure of personal information, including personal information regarding our clinical trial subjects or employees, could harm our reputation directly, compel us to comply with federal and/or state breach notification laws and foreign law equivalents, subject us to mandatory corrective action, and otherwise subject us to liability under laws and regulations that

protect the privacy and security of personal information, which could result in significant legal and financial exposure and reputational damages that could potentially have an adverse effect on our business.

Failure to comply with health and data protection laws and regulations could lead to government enforcement actions (which could include civil or criminal penalties), private litigation, and/or adverse publicity and could negatively affect our operating results and business.

We and any potential collaborators may be subject to federal, state, and foreign data protection laws and regulations (i.e., laws and regulations that address privacy and data security). In the United States, numerous federal and state laws and regulations, including federal health information privacy laws, state data breach notification laws, state health information privacy laws, and federal and state consumer protection laws (e.g., Section 5 of the Federal Trade Commission Act), that govern the collection, use, disclosure, and protection of health-related and other personal information could apply to our operations or the operations of our collaborators. In addition, we may obtain health information from third parties (including research institutions from which we obtain clinical trial data) that are subject to privacy and security requirements under the federal Health Insurance Portability and Accountability Act of 1996, or HIPAA, as amended by the Health Information Technology for Economic and Clinical Health Act of 2009, or HITECH. Depending on the facts and circumstances, we could be subject to criminal penalties if we knowingly obtain, use, or disclose individually identifiable health information maintained by a HIPAA-covered entity in a manner that is not authorized or permitted by HIPAA.

As of May 25, 2018, the General Data Protection Regulation, or GDPR, has replaced the Data Protection Directive with respect to the processing of personal data in the European Union. The GDPR imposes several stringent requirements for controllers and processors of personal data, including, for example, higher standards for obtaining consent from individuals to process their personal data, more robust disclosures to individuals and a strengthened individual data rights regime, shortened timelines for data breach notifications, limitations on retention and secondary use of information, increased requirements pertaining to health data and pseudonymised (i.e., key-coded) data and additional obligations when we contract third party processors in connection with the processing of the personal data. The GDPR provides that European Union member states may make their own further laws and regulations limiting the processing of genetic, biometric or health data, which could limit our ability to use and share personal data or could cause our costs could increase, and harm our business and financial condition. Failure to comply with the requirements of GDPR and the applicable national data protection laws of the European Union member states may result in fines of up to €20,000,000 or up to 4% of the total worldwide annual turnover of the preceding financial year, whichever is higher, and other administrative penalties. To comply with the new data protection rules imposed by GDPR we may be required to put in place additional mechanisms ensuring compliance. This may be onerous and adversely affect our business, financial condition, results of operations and prospects.

European data protection law also imposes strict rules on the transfer of personal data out of the European Union, including to the United States. These obligations may be interpreted and applied in a manner that is inconsistent from one jurisdiction to another and may conflict with other requirements or our practices. In addition, these rules are constantly under scrutiny. For example, following a decision of the Court of Justice of the European Union in October 2015, transferring personal data to U.S. companies that had certified as members of the U.S. Safe Harbor Scheme was declared invalid. In July 2016 the European Commission adopted the U.S.-EU Privacy Shield Framework which replaces the Safe Harbor Scheme. However, this Framework is under review and there is currently litigation challenging other European Union mechanisms for adequate data transfers (i.e., the standard contractual clauses). It is uncertain whether the Privacy Shield Framework and/or the standard contractual clauses will be similarly invalidated by the European courts. We rely on a mixture of mechanisms to transfer personal data from our European Union business to the United States, and could be impacted by changes in law as a result of a future review of these transfer mechanisms by European regulators under the GDPR, as well as current challenges to these mechanisms in the European courts.

Additionally, California recently enacted legislation that has been dubbed the first “GDPR-like” law in the United States. Known as the California Consumer Privacy Act, or CCPA, it creates new individual privacy rights for consumers (as that word is broadly defined in the law) and places increased privacy and security obligations on entities handling personal data of consumers or households. The CCPA, which went into effect on January 1, 2020, requires covered companies to provide new disclosures to California consumers, and provides such consumers new ways to opt-out of certain sales of personal information. The CCPA provides for civil penalties for violations, as well as a private right of action for data breaches that is expected to increase data breach litigation. The CCPA may increase our compliance costs and potential liability. Some observers have noted that the CCPA could mark the beginning of a trend toward more stringent privacy legislation in the United States, which could increase our potential liability and adversely affect our business.

Compliance with U.S and international data protection laws and regulations could require us to take on more onerous obligations in our contracts, restrict our ability to collect, use and disclose data, or in some cases, impact our ability to operate in certain jurisdictions. Failure to comply with U.S. and international data protection laws and regulations could result in

government enforcement actions (which could include civil or criminal penalties), private litigation, and/or adverse publicity and could negatively affect our operating results and business. Moreover, clinical trial subjects about whom we or our potential collaborators 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, failed to comply with data protection laws, or breached our contractual obligations, 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.

Our ability to use our net operating loss carryforwards and certain other tax attributes may be limited.

As of December 31, 2020, we had aggregate U.S. federal net operating loss, or NOL, carryforwards of approximately $53.9 million. Our U.S. federal NOLs generated in taxable years ending prior to 2018 could expire unused. Under the Tax Cuts and Jobs Act, as modified by the CARES Act, U.S. federal NOLs incurred in taxable years beginning after December 31, 2017 may be carried forward indefinitely, but the deductibility of such U.S. federal NOLs in tax years beginning after December 31, 2017 is generally limited to 80% of taxable income. It is uncertain if and to what extent various states will conform to the Tax Cuts and Jobs Act or the CARES Act.

In addition, under Sections 382 and 383 of the Code and corresponding provisions of state law, if a corporation undergoes an "ownership change," which is generally defined as a greater than 50% change (by value) in its equity ownership over a three-year period, the corporation's ability to use its pre-change NOL carryforwards and other pre-change tax attributes (such as research tax credits) to offset its post-change income may be limited. It is possible that we have experienced one or more ownership changes in the past. In addition, we may also experience ownership changes in the future as a result of subsequent shifts in our stock ownership some of which may be outside of our control. As a result, if we earn net taxable income, our ability to use our pre-ownership change NOL carryforwards to offset U.S. federal taxable income may be subject to limitations, which could potentially result in increased future tax liability to us. In addition, at the state level, there may be periods during which the use of NOLs is suspended or otherwise limited, which could accelerate or permanently increase state taxes owed.

We conduct significant operations through our Australian wholly-owned subsidiary. If we lose our ability to operate in Australia, or if our subsidiary is unable to receive the research and development tax credit allowed by Australian regulations, our business and results of operations will suffer.

In January 2019, we formed a wholly-owned Australian subsidiary, Equillium Australia Pty Ltd, to conduct the clinical development of itolizumab (EQ001) for the treatment of uncontrolled asthma in Australia and New Zealand. Due to the geographical distance and lack of employees currently in Australia, as well as our lack of experience operating in Australia, we may not be able to efficiently or successfully monitor, develop or commercialize itolizumab (EQ001) in Australia and New Zealand, including conducting clinical trials. Furthermore, we have no assurance that the results of any clinical trials that we conduct for our product candidate in Australia and New Zealand will be accepted by the FDA or other foreign regulatory authorities for development and commercialization approvals.

In addition, current Australian tax regulations provide for a refundable research and development tax credit. If we lose our ability to operate Equillium Australia Pty Ltd in Australia, or if we are ineligible or unable to receive the research and development tax credit, or the Australian government significantly reduces or eliminates the tax credit, our business and results of operations would be adversely affected.

If we fail to comply with U.S. export control and economic sanctions, our business, financial condition and prospects may be materially and adversely affected.

Our business and our products are subject to U.S. export control laws and regulations, including the U.S. Export Administration Regulations and economic and trade sanctions regulations administered by the U.S. Treasury Department's Office of Foreign Assets Control, or OFAC. Our company must comply with these laws and regulations. The antibody sequence for itolizumab (EQ001) is derived from Cuban-origin intellectual property and thus we believe this to be a pharmaceutical of Cuban origin, which would make the import, development and commercialization of itolizumab (EQ001) subject to these laws, sanctions and regulations. We currently rely on a general license issued by OFAC under the Cuban Assets Control Regulations, or CACR, relating to Cuban-origin pharmaceuticals to import and conduct clinical trials relating to itolizumab (EQ001). In the absence of the OFAC general license, all of our development and potential commercialization activities for itolizumab (EQ001) would be prohibited under the CACR, and we would be required to request a specific license from OFAC authorizing such activities, which OFAC could deny.

We submitted to OFAC, and subsequently amended and supplemented, a request for interpretive guidance confirming the applicability of the general license to itolizumab (EQ001), or in its absence, a specific license authorization from OFAC authorizing activities relating to the commercialization of itolizumab (EQ001), or the Submission. We simultaneously

requested that OFAC treat the Submission as a voluntary disclosure if OFAC concluded that our determination that the general license applies to itolizumab (EQ001) was in error.

In November 2019, OFAC notified us that after careful consideration, which included consultation with the FDA, OFAC determined that itolizumab (EQ001) falls within the definition of "Cuban-origin pharmaceutical" and, as such, the general licenses at section 515.547(b) and (c) of the CACR authorize the conduct of clinical trials for itolizumab (EQ001) for the purpose of seeking approval for the drug from the FDA. Thus, no further authorization is required from OFAC at this time for our ongoing and future clinical trials of itolizumab (EQ001).

Even though OFAC has concluded that the general license for Cuban-origin pharmaceuticals applies to itolizumab (EQ001), there can be no assurance that the general license will not be revoked or modified by OFAC in the future, or that we will remain in compliance with the general license or other export laws and regulations. If OFAC revokes or modifies the general license, or otherwise determines that the general license does not apply to itolizumab (EQ001), and OFAC then denies our request for a specific license or delays issuance of a specific license, we will be unable to deal in, or otherwise commercialize, itolizumab (EQ001). In that case, we would be required to cease operations related to itolizumab (EQ001), which would materially and adversely affect our financial condition and business prospects. In addition, in the absence of the general or specific license, the transfer, sale and/or purchase of our securities could be prohibited, and the ownership or possession of our securities could be subject to an affirmative OFAC reporting requirement relating to blocked property. Any violations of the CACR or other applicable export control and sanctions laws could subject us and certain of our employees to substantial civil or criminal penalties.

Changes in healthcare law and implementing regulations, as well as changes in healthcare policy, may impact our business in ways that we cannot currently predict and may have a significant adverse effect on our business and results of operations.

There have been, and continue to be, numerous legislative and regulatory changes and proposed changes regarding the healthcare system that could prevent or delay marketing approval of product candidates, restrict or regulate post-approval activities and affect our ability to profitably sell any product candidates for which we obtain marketing approval. Among policy makers and payors in the United States there is significant interest in promoting changes in healthcare systems with the stated goals of containing healthcare costs, improving quality and/or expanding access and the pharmaceutical industry has been a particular focus of these efforts and has been significantly affected by major legislative initiatives.

The Affordable Care Act substantially changed the way healthcare is financed by both the government and private insurers, and significantly impacts the U.S. pharmaceutical industry. The Affordable Care Act, among other things: (i) introduced a new "average manufacturer price" calculation for drugs and biologics that are inhaled, infused, instilled, implanted or injected and that are not generally dispensed through retail community pharmacies; (ii) increased the minimum Medicaid rebates owed by manufacturers under the Medicaid Drug Rebate Program and expanded rebate liability from fee-for-service Medicaid utilization to include the utilization of Medicaid managed care organizations as well; (iii) established a branded prescription drug fee that pharmaceutical manufacturers of branded prescription drugs must pay to the federal government; (iv) expanded the list of covered entities eligible to participate in the 340B drug pricing program by adding new entities to the program; (v) established a new Medicare Part D coverage gap discount program, in which manufacturers currently must agree to offer 70% point-of-sale discounts off negotiated prices of applicable branded drugs to eligible beneficiaries during their coverage gap period, as a condition for the manufacturer's outpatient drugs to be covered under Medicare Part D; (vi) expanded eligibility criteria for Medicaid programs by, among other things, allowing states to offer Medicaid coverage to additional individuals, including individuals with income at or below 133% of the federal poverty level, thereby potentially increasing manufacturers' Medicaid rebate liability; (vii) created a licensure framework for follow-on biologic products; and (viii) established a Center for Medicare & Medicaid Innovation at the Centers for Medicare & Medicaid Services to test innovative payment and service delivery models to lower Medicare and Medicaid spending.

There remain judicial and Congressional challenges to certain aspects of the Affordable Care Act, as well as efforts by the Trump administration to repeal or replace certain aspects of the Affordable Care Act. For example, the Tax Cuts and Jobs Act of 2017, or TCJA, was enacted, which included a provision that repealed, effective January 1, 2019, the tax-based shared responsibility payment imposed by the Affordable Care Act on certain individuals who fail to maintain qualifying health coverage for all or part of a year that is commonly referred to as the "individual mandate." On December 14, 2018, a U.S. District Court Judge in the Northern District of Texas ruled that the individual mandate is a critical and inseverable feature of the Affordable Care Act, and therefore, because it was repealed as part of the TCJA, the remaining provisions of the Affordable Care Act are invalid as well. On December 18, 2019, the U.S. Court of Appeals for the 5th Circuit ruled that the individual mandate was unconstitutional but remanded the case back to the District Court to determine whether the remaining provisions of the Affordable Care Act are invalid as well. The U.S. Supreme Court is currently reviewing the case, although it is unclear when a decision will be made or how the Supreme Court will rule. Although the U.S. Supreme Court has yet ruled on the constitutionality of the Affordable Care Act, on January 28, 2021, President Biden issued an executive order to initiate a special

enrollment period from February 15, 2021 through May 15, 2021 for purposes of obtaining health insurance coverage through the Affordable Care Act marketplace. The executive order also instructs 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 Affordable Care Act. It is unclear how the U.S. Supreme Court ruling, other such litigation and the healthcare reform measures of the Biden administration will impact the Affordable Care Act and our business. We are continuing to monitor any changes to the Affordable Care Act that, in turn, may potentially impact our business in the future.

Other legislative changes have been proposed and adopted since the Affordable Care Act was enacted. These changes include aggregate reductions to Medicare payments to providers of 2% per fiscal year pursuant to the Budget Control Act of 2011 and subsequent laws, which began in 2013 and will remain in effect through 2030 unless additional Congressional action is taken. These Medicare sequester reductions will be suspended from May 1, 2020 through March 31, 2021 due to the COVID-19 pandemic. In January 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, including hospitals, imaging centers and cancer treatment centers, and increased the statute of limitations period for the government to recover overpayments to providers from three to five years. New laws may result in additional reductions in Medicare and other healthcare funding, which may materially adversely affect customer demand and affordability for our products and, accordingly, the results of our financial operations.

Also, there has been heightened governmental scrutiny recently over the manner in which pharmaceutical companies set prices for their marketed products, which have resulted in several Congressional inquiries and proposed federal legislation, as well as state efforts, designed to, among other things, bring more transparency to product 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 drug products. At the federal level, the Trump administration's budget proposal for fiscal year 2021 includes a $135 billion allowance to support legislative proposals seeking to reduce drug prices, increase competition, lower out-of-pocket drug costs for patients, and increase patient access to lower-cost generic and biosimilar drugs. On March 10, 2020, the Trump administration sent "principles" for drug pricing to Congress, calling for legislation that would, among other things, cap Medicare Part D beneficiary out-of-pocket pharmacy expenses, provide an option to cap Medicare Part D beneficiary monthly out-of-pocket expenses, and place limits on pharmaceutical price increases. Further, the Trump administration previously released a "Blueprint," or plan, to lower drug prices and reduce out of pocket costs of drugs that contained proposals to increase drug manufacturer competition, increase the negotiating power of certain federal healthcare programs, incentivize manufacturers to lower the list price of their products, and reduce the out of pocket costs of drug products paid by consumers. Additionally, on July 24, 2020 and September 13, 2020, President Trump announced several executive orders related to prescription drug pricing that attempt to implement several of the Trump administration proposals. The FDA released a final rule, effective November 30, 2020, implementing a portion of the importation executive order providing guidance for states to build and submit importation plans for drugs from Canada. Further, on November 20, 2020, HHS finalized 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. In addition, on November 20, 2020, CMS issued an interim final rule implementing President Trump's Most Favored Nation executive order, which would tie Medicare Part B payments for certain physician-administered drugs to the lowest price paid in other economically advanced countries, effective January 1, 2021. On December 28, 2020, the U.S. District Court in Northern California issued a nationwide preliminary injunction against implementation of the interim final rule. However, it is unclear whether the Biden administration will work to reverse these measures or pursue similar policy initiatives. At the state level, individual states in the United States are increasingly active in passing legislation and implementing regulations designed to control pharmaceutical and biological 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.

We expect that these and other healthcare reform measures that may be adopted in the future, may result in more rigorous coverage criteria and lower reimbursement, and in additional downward pressure on the price that we receive for any approved product. It is possible that additional governmental action is taken in response to the COVID-19 pandemic. Any reduction in reimbursement from Medicare or other government-funded 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 drugs, once marketing approval is obtained.

If any of our services providers are characterized as employees, we would be subject to employment and tax withholding liabilities and other additional costs.

We rely on independent third parties to provide certain services to us. We structure our relationships with these outside services providers in a manner that we believe results in an independent contractor relationship, not an employee relationship. An independent contractor is generally distinguished from an employee by his or her degree of autonomy and independence in providing services. A high degree of autonomy and independence is generally indicative of an independent contractor relationship, while a high degree of control is generally indicative of an employment relationship. Tax or other regulatory authorities may challenge our characterization of services providers as independent contractors both under existing laws and regulations and under laws and regulations adopted in the future. We are aware of a number of judicial decisions and legislative proposals that could bring about major changes in the way workers are classified, including the California legislature's recent passage of California Assembly Bill 5, which California Governor Gavin Newsom signed into law in September 2019, or AB 5, and Assembly Bill 2257, or AB 2257, which went into effect in September 2020 and amended certain portions of AB 5. AB 5 and AB 2257 are often referred to collectively simply as AB 5. AB 5 purports to codify the holding of the California Supreme Court's unanimous decision in Dynamex Operations West, Inc. v. Superior Court of Los Angeles, which introduced a new test for determining worker classification that is widely viewed as expanding the scope of employee relationships and narrowing the scope of independent contractor relationships. While AB 5 exempts certain licensed health care professionals, including physicians and psychologists, not all of our independent contractors work in exempt occupations. Given AB 5's recent passage, there is little guidance from the regulatory authorities charged with its enforcement and there is a significant degree of uncertainty regarding its application. In addition, AB 5 has been the subject of widespread national discussion and it is possible that other jurisdictions might enact similar laws. As a result, there is significant uncertainty regarding what the state, federal and foreign worker classification regulatory landscape will look like in future years. The current economic climate indicates that the debate over worker classification will continue for the foreseeable future. If such regulatory authorities or state, federal or foreign courts were to determine that our services providers are employees and not independent contractors, we would, among other things, be required to withhold income taxes, to withhold and pay Social Security, Medicare and similar taxes, to pay unemployment and other related payroll taxes, and to provide certain employee benefits. We could also be liable for unpaid past taxes and other costs and subject to penalties. As a result, any determination that the service providers we characterize as independent contractors should be classified as employees could adversely impact our business, financial condition and results of operations.

We may be subject to applicable foreign, federal and state fraud and abuse, transparency, government price reporting, and other healthcare laws and regulations. If we are unable to comply, or have not fully complied, with such laws, we could face substantial penalties.

Healthcare providers, physicians and third-party payors will play a primary role in the recommendation and prescription of any future product candidates for which we obtain marketing approval. Our arrangements with third-party payors and customers may expose us to broadly applicable fraud and abuse and other healthcare laws and regulations that may affect the business or financial arrangements and relationships through which we conduct research and would market, sell and distribute our products. Even though we do not and will not control referrals of healthcare services or bill directly to Medicare, Medicaid or other third-party payors, federal and state healthcare laws and regulations pertaining to fraud and abuse and patients' rights are and will be applicable to our business. The laws that may affect our ability to operate include, but are not limited to:

- the federal Anti-Kickback Statute, which prohibits, among other things, any person or entity from knowingly and willfully soliciting, receiving, offering or paying any remuneration, directly or indirectly, overtly or covertly, in cash or in kind, to induce or reward either the referral of an individual for, or the purchase, order or recommendation of an item or service reimbursable, in whole or in part, under a federal healthcare program, such as the Medicare and Medicaid programs. The term "remuneration" has been broadly interpreted to include anything of value. The federal Anti-Kickback Statute has also been interpreted to apply to arrangements between pharmaceutical manufacturers on the one hand and prescribers, purchasers, and formulary managers on the other the other hand. There are a number of statutory exceptions and regulatory safe harbors protecting some common activities from prosecution. Additionally, the intent standard under the federal Anti-Kickback Statute was amended by the Affordable Care Act such that a person or entity no longer needs to have actual knowledge of the statute or specific intent to violate it in order to have committed a violation. In addition, the Affordable Care Act codified case law 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 federal False Claims Act, or FCA;

- federal civil and criminal false claims laws, such as the FCA which can be enforced by private citizens, on behalf of the government, through civil qui tam actions, and civil monetary penalty laws prohibits individuals or entities from, among other things, knowingly presenting, or causing to be presented, false, fictitious or fraudulent claims for payment or approval by the federal government, including federal health care programs, such as Medicare and

Medicaid, and knowingly making, using or causing to be made or used a false record or statement material to a false or fraudulent claim, or knowingly making a false statement to improperly avoid, decrease or conceal an obligation to pay money to the federal government. In addition, 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. 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 U.S. 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. Criminal prosecution is also possible for making or presenting a false, fictitious or fraudulent claim to the federal government. Government enforcement agencies and private whistleblowers have investigated pharmaceutical companies for or asserted liability under the FCA for a variety of alleged promotional and marketing activities, such as providing free product to customers with the expectation that the customers would bill federal programs for the product, providing consulting fees and other benefits to physicians to induce them to prescribe products, engaging in promotion for "off-label" uses, and submitting inflated best price information to the Medicaid Rebate Program;

- HIPAA, among other things, imposes criminal and civil liability for executing or attempting to execute a scheme to defraud any healthcare benefit program, including private third-party payors, knowingly and willfully embezzling or stealing from a healthcare benefit program, willfully obstructing a criminal investigation of a healthcare offense, and knowingly and willfully falsifying, concealing or covering up a material fact or making any materially false, fictitious or fraudulent statement or representation, in connection with the delivery of or payment for healthcare benefits, items or services. Like the federal Anti-Kickback Statute, the Affordable Care Act amended the intent standard for certain healthcare fraud statutes under HIPAA such that a person or entity no longer needs to have actual knowledge of the statute or specific intent to violate it in order to have committed a violation;

- HIPAA, as amended by HITECH and their implementing regulations, which imposes privacy, security and breach reporting obligations with respect to individually identifiable health information upon entities subject to the law, such as health plans, healthcare clearinghouses and certain healthcare providers, known as covered entities, and their respective business associates that perform services for them that involve individually identifiable health information. 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 U.S. federal courts to enforce the federal HIPAA laws and seek attorneys' fees and costs associated with pursuing federal civil actions;

- the U.S. federal Food, Drug and Cosmetic Act, which prohibits, among other things, the adulteration or misbranding of drugs, biologics and medical devices;

- the Public Health Service Act, which prohibits, among other things, the introduction of a biological product into interstate commerce without an approved BLA;

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

- the federal transparency requirements under the Physician Payments Sunshine Act, created under the Affordable Care Act, which requires, among other things, certain manufacturers of drugs, devices, biologics and medical supplies reimbursed under Medicare, Medicaid, or the Children's Health Insurance Program to annually report to CMS information related to payments and other transfers of value provided to physicians, as defined by such law, and teaching hospitals and physician ownership and investment interests, including such ownership and investment interests held by a physician's immediate family members;

- state and foreign law equivalents of each of the above federal laws, such as anti-kickback and false claims laws, that may impose similar or more prohibitive restrictions, and may apply to items or services reimbursed by any non-governmental third-party payors, including private insurers; and

- state and foreign laws that require pharmaceutical companies to implement compliance programs and comply with the pharmaceutical industry's voluntary compliance guidelines and the relevant compliance guidance promulgated by the federal government; track and report gifts, compensation and other remuneration provided to physicians, other health care providers, and certain health care entities; report information related to drug pricing; and/or ensure the registration and compliance of sales personnel. In addition, we may be subject to federal, state and foreign laws that govern the privacy and security of health information or personally identifiable information in certain circumstances, including state health information privacy and data breach notification laws which govern the collection, use,

disclosure, and protection of health-related and other personal information, many of which differ from each other in significant ways and often are not pre-empted by HIPAA, thus complicating compliance efforts.

We have entered into consulting and scientific advisory board arrangements with physicians and other healthcare providers, including some who could influence the use of itolizumab (EQ001) and any future product candidates, if approved. Because of the complex and far-reaching nature of these laws, regulatory agencies may view these transactions as prohibited arrangements that must be restructured, or discontinued, or for which we could be subject to other significant penalties. We could be adversely affected if regulatory agencies interpret our financial relationships with providers who may influence the ordering of and use of itolizumab (EQ001) or any future product candidates, if approved, to be in violation of applicable laws.

The scope and enforcement of each of these laws is uncertain and subject to rapid change in the current environment of healthcare reform. Federal and state enforcement bodies have recently increased their scrutiny of interactions between healthcare companies, healthcare providers and other third parties, including charitable foundations, which has led to a number of investigations, prosecutions, convictions and settlements in the healthcare industry. It is possible that governmental authorities may conclude that our business practices, including our consulting arrangements with physicians, some of whom receive stock options as compensation for services provided, do not comply with current or future statutes, regulations, agency guidance or case law involving applicable healthcare laws. Responding to investigations can be time and resource-consuming and can divert management's attention from the business. Any such investigation or settlement could increase our costs or otherwise have an adverse effect on our business.

Ensuring that our business arrangements with third parties comply with applicable healthcare laws and regulations will likely be costly. If our operations are found to be in violation of any of these laws or any other current or future governmental laws and regulations that may apply to us, we may be subject to significant civil, criminal and administrative penalties, damages, fines, disgorgement, imprisonment, exclusion from government funded healthcare programs, such as Medicare and Medicaid, contractual damages, reputational harm, diminished profits and future earnings, 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, and the curtailment or restructuring of our operations, any of which could substantially disrupt our operations. If any of the physicians or other healthcare providers or entities with whom we expect to do business is found to be not in compliance with applicable laws, they may be subject to significant criminal, civil or administrative sanctions, including exclusions from government funded healthcare programs.

We are subject to certain U.S. and certain foreign anti-corruption, anti-money laundering, export control, sanctions, and other trade laws and regulations. We can face serious consequences for violations.

U.S. and foreign anti-corruption, anti-money laundering, export control, sanctions, and other trade laws and regulations, or collectively Trade Laws, prohibit, among other things, companies and their employees, agents, CROs, legal counsel, accountants, consultants, contractors, and other partners from authorizing, promising, offering, providing, soliciting, or receiving, directly or indirectly, corrupt or improper payments or anything else of value to or from recipients in the public or private sector. Violations of Trade Laws can result in substantial criminal fines and civil penalties, imprisonment, the loss of trade privileges, debarment, tax reassessments, breach of contract and fraud litigation, reputational harm, and other consequences. We have direct or indirect interactions with officials and employees of government agencies or government-affiliated hospitals, universities, and other organizations. We also expect our non-U.S. activities to increase over time. We expect to rely on third parties for research, preclinical studies, and clinical trials and/or to obtain necessary permits, licenses, patent registrations, and other marketing approvals. We can be held liable for the corrupt or other illegal activities of our personnel, agents, or partners, even if we do not explicitly authorize or have prior 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.

Risks Related to Ownership of our Common Stock

The stock price of our common stock may be volatile or may decline regardless of our operating performance, and you could lose all or part of your investment.

The market price of our common stock may fluctuate significantly in response to numerous factors, many of which are beyond our control, including:

- our operating performance and the performance of other similar companies;
- delays or other adverse impacts to our clinical trials from global health epidemics, such as those related to COVID-19;

- our ability to enroll and retain subjects in our ongoing and future clinical trials;
- results from our ongoing and future clinical trials with our current and future product candidates, and the results of the clinical trials of our competitors or of Biocon;
- the timing of topline data from ongoing trials, including our ongoing and planned clinical trials of itolizumab;
- changes in our projected operating results that we provide to the public, our failure to meet these projections or changes in recommendations by securities analysts that elect to follow our common stock;
- regulatory or legal developments in the United States and other countries of ours, our competitors', or Biocon's;
- the level of expenses related to future product candidates or clinical development programs;
- changes in the structure of healthcare payment systems;
- our ability to achieve product development goals in the timeframe we announce;
- announcements of clinical trial results, regulatory developments, acquisitions, strategic alliances or significant agreements by us, by our competitors, or by Biocon;
- the success or failure of our efforts to acquire, license or develop additional product candidates;
- recruitment or departure of key personnel;
- the economy as a whole and market conditions in our industry;
- trading activity by a limited number of stockholders who together beneficially own a majority of our outstanding common stock;
- the size of our market float; and
- any other factors discussed in this report.

In addition, the stock markets have experienced extreme price and volume fluctuations, including as a result of the COVID-19 pandemic, that have affected and continue to affect the market prices of equity securities of many life sciences companies. Stock prices of many biopharmaceutical companies have fluctuated in a manner unrelated or disproportionate to the operating performance of those companies. In the past, stockholders have filed securities class action litigation following periods of market volatility. If we were to become involved in securities litigation, it could subject us to substantial costs, divert resources and the attention of management from our business and adversely affect our business.

Raising additional capital may cause dilution to our stockholders, restrict our operations or require us to relinquish rights to our technologies or product candidates.

Until such time, if ever, as we can generate substantial product revenues, we expect to finance our cash needs through a combination of equity offerings, debt financings, collaboration and license agreements. To the extent that we raise additional capital through the sale of equity or convertible debt securities, your ownership interest will be diluted and the terms of these securities may include liquidation or other preferences that adversely affect your rights as a common stockholder. In July 2020, we entered into the 2020 ATM Facility with Jefferies under which we may offer and sell shares of our common stock having an aggregate offering price of up to $150 million from time to time through Jefferies acting as our sales agent. As of December 31, 2020, we have sold an aggregate of 788,685 shares of our common stock under the 2020 ATM facility for gross proceeds of $10.4 million. There have been no sales of shares of our common stock under the 2020 ATM Facility since December 31, 2020 and through the date of the filing of this Annual Report on Form 10-K.

In March 2020, we entered into the Purchase Agreement with Lincoln Park which provides that, upon the terms and subject to the conditions and limitations set forth therein, we may sell to Lincoln Park up to $15.0 million of shares of our common stock, from time to time over the 36-month term of the Purchase Agreement, and we issued an additional 65,374 shares of our common stock to Lincoln Park as commitment shares under the Purchase Agreement. As of the date of the filing of this Annual Report on Form 10-K, we have not sold any shares of our common stock to Lincoln Park under the Purchase Agreement.

Debt financing, if available, may involve agreements that include covenants limiting or restricting our ability to take specific actions, such as incurring additional debt, making capital expenditures or declaring dividends. Subject to limited exceptions, our Loan Agreement also prohibits us from incurring indebtedness without the prior written consent of the lenders.

If we raise funds through collaboration and license agreements with third parties, we may have to relinquish valuable rights to our technologies, future revenue streams, research programs or product candidates or grant licenses on terms that may not be favorable to us. If we are unable to raise additional funds through equity or debt financings when needed, we may be required to delay, limit, reduce or terminate our product development or future commercialization efforts or grant rights to develop and market product candidates that we would otherwise prefer to develop and market ourselves.

If there are substantial sales of shares of our common stock, the price of our common stock could decline.

The price of our common stock could decline if there are substantial sales of our common stock, particularly sales by our directors, executive officers and significant stockholders, or if there is a large number of shares of our common stock available for sale and the market perceives that sales will occur. As of March 19, 2021, we had 29,040,270 shares of our common stock outstanding. Shares held by directors, executive officers and other affiliates will be subject to volume limitations under Rule 144 under the Securities Act and various vesting agreements. We have registered shares of common stock that we have issued and may issue under our employee equity incentive plans, which shares may be sold freely in the public market upon issuance. Sales of our common stock by current stockholders may make it more difficult for us to sell equity or equity-related securities in the future at a time and price that we deem reasonable or appropriate, and make it more difficult for other stockholders to sell shares of our common stock.

The market price of the shares of our common stock could decline as a result of the sale of a substantial number of our shares of common stock in the public market or the perception in the market that the holders of a large number of shares intend to sell their shares. We are unable to predict the effect that sales may have on the prevailing market price of our common stock.

The concentration of our stock ownership will likely limit your ability to influence corporate matters, including the ability to influence the outcome of director elections and other matters requiring stockholder approval.

Our executive officers, directors and the holders of more than 5% of our outstanding common stock, in the aggregate, beneficially own a significant percentage of our common stock. As a result, these stockholders, acting together, will have significant influence over all matters that require approval by our stockholders, including the election of directors and approval of significant corporate transactions. Corporate actions might be taken even if other stockholders oppose them. This concentration of ownership might also have the effect of delaying or preventing a change of control of our company that other stockholders may view as beneficial.

Delaware law and provisions in our amended and restated certificate of incorporation and amended and restated bylaws could make a merger, tender offer or proxy contest difficult, thereby depressing the trading price of our common stock.

Provisions of our amended and restated certificate of incorporation and amended and restated bylaws may delay or discourage transactions involving an actual or potential change in our control or change in our management, including transactions in which stockholders might otherwise receive a premium for their shares or transactions that our stockholders might otherwise deem to be in their best interests. Therefore, these provisions could adversely affect the price of our common stock. Among other things, our amended and restated certificate of incorporation and amended and restated bylaws:

- permit our board of directors to issue up to 10,000,000 shares of preferred stock, with any rights, preferences and privileges as they may designate (including the right to approve an acquisition or other change in our control);
- provide that the authorized number of directors may be changed only by resolution of the board of directors;
- provide that the board of directors or any individual director may only be removed with cause and the affirmative vote of the holders of at least 66-2/3% of the voting power of all of our then outstanding common stock;
- provide that all vacancies, including newly created directorships, may, except as otherwise required by law, be filled by the affirmative vote of a majority of directors then in office, even if less than a quorum;
- divide our board of directors into three classes;
- require that any action to be taken by our stockholders must be effected at a duly called annual or special meeting of stockholders and not be taken by written consent;

- provide that stockholders seeking to present proposals before a meeting of stockholders or to nominate candidates for election as directors at a meeting of stockholders must provide notice in writing in a timely manner and also specify requirements as to the form and content of a stockholder's notice;
- do not provide for cumulative voting rights (therefore allowing the holders of a majority of the shares of common stock entitled to vote in any election of directors to elect all of the directors standing for election, if they should so choose);
- provide that special meetings of our stockholders may be called only by the chairman of the board, our Chief Executive Officer or by the board of directors pursuant to a resolution adopted by a majority of the total number of authorized directors; and
- provide that the Court of Chancery of the State of Delaware will be the sole and exclusive forum for the following types of actions or proceedings under Delaware statutory or common law; (i) any derivative action or proceeding brought on our behalf, (ii) any action asserting a claim of breach of a fiduciary duty owed by any of our directors or officers to us or our stockholders, (iii) any action asserting a claim against us arising pursuant to any provision of the Delaware General Corporation Law or our certificate of incorporation or bylaws, or (iv) any action asserting a claim against us governed by the internal affairs doctrine. These provisions would not apply to suits brought to enforce a duty or liability created by the Exchange Act. Furthermore, Section 22 of the Securities Act creates concurrent jurisdiction for federal and state courts over all such Securities Act actions. Accordingly, both state and federal courts have jurisdiction to entertain such claims.

The amendment of any of these provisions, with the exception of the ability of our board of directors to issue shares of preferred stock and designate any rights, preferences and privileges thereto, would require approval by the holders of at least 66-2/3% of our then-outstanding common stock.

In addition, as a Delaware corporation, we are subject to Section 203 of the Delaware General Corporation Law. These provisions may prohibit large stockholders, in particular those owning 15% or more of our outstanding voting stock, from merging or combining with us for a certain period of time. A Delaware corporation may opt out of this provision by express provision in its original certificate of incorporation or by amendment to its certificate of incorporation or bylaws approved by its stockholders. However, we have not opted out of this provision.

These and other provisions in our amended and restated certificate of incorporation, amended and restated bylaws and Delaware law could make it more difficult for stockholders or potential acquirors to obtain control of our board of directors or initiate actions that are opposed by our then-current board of directors, including delay or impede a merger, tender offer or proxy contest involving our company. The existence of these provisions could negatively affect the price of our common stock and limit opportunities for you to realize value in a corporate transaction.

Our amended and restated certificate of incorporation provides that the Court of Chancery of the State of Delaware and the federal district courts of the United States of America will be the exclusive forums for substantially all disputes between us and our stockholders, which could limit our stockholders' ability to obtain a favorable judicial forum for disputes with us or our directors, officers or employees.

Our amended and restated certificate of incorporation provides that, to the fullest extent permitted by law, the Court of Chancery of the State of Delaware is the exclusive forum for the following types of actions or proceedings under Delaware statutory or common law: (i) any derivative action or proceeding brought on our behalf, (ii) any action asserting a breach of fiduciary duty, (iii) any action asserting a claim against us arising pursuant to the Delaware General Corporation Law, our amended and restated certificate of incorporation or amended and restated bylaws or (iv) any action asserting a claim against us that is governed by the internal affairs doctrine. These provisions would not apply to suits brought to enforce a duty or liability created by the Exchange Act. Furthermore, Section 22 of the Securities Act creates concurrent jurisdiction for federal and state courts over all such Securities Act actions. Accordingly, both state and federal courts have jurisdiction to entertain such claims. To prevent having to litigate claims in multiple jurisdictions and the threat of inconsistent or contrary rulings by different courts, among other considerations, our amended and restated certificate of incorporation also provides that unless we consent in writing to the selection of an alternative forum, the federal district courts of the United States shall be the exclusive forum for the resolution of any complaint asserting a cause of action arising under the Securities Act. While the Delaware courts have determined that such choice of forum provisions are facially valid, a stockholder may nevertheless seek to bring a claim in a venue other than those designated in the exclusive forum provisions. In such instance, we would expect to vigorously assert the validity and enforceability of the exclusive forum provisions of our amended and restated certificate of incorporation. This may require significant additional costs associated with resolving such action in other jurisdictions and there can be no assurance that the provisions will be enforced by a court in these other jurisdictions.

These exclusive forum provisions may limit a stockholder's ability to bring a claim in a judicial forum that it finds favorable for disputes with us or our directors, officers, or other employees, which may discourage lawsuits against us and our directors, officers and other employees. If a court were to find either exclusive-forum provision in our amended and restated certificate of incorporation to be inapplicable or unenforceable in an action, we may incur further significant additional costs associated with resolving the dispute in other jurisdictions, all of which could seriously harm our business.

General Risk Factors

The novel coronavirus global pandemic has adversely impacted our business, including our clinical trials, and could further impact other aspects of our business including our supply chain, personnel, and our business development activities, the magnitude and extent of which are uncertain.

In December 2019, a novel strain of coronavirus, designated COVID-19, was first reported in Wuhan, China and has since become a global pandemic. The President of the United States declared the coronavirus pandemic a national emergency and many states and municipalities in the United States, including California, have announced aggressive actions to reduce the spread of the disease, including limiting non-essential gatherings of people, ceasing all non-essential travel, ordering certain businesses and government agencies to cease non-essential operations at physical locations and issuing "shelter-in-place" orders which direct individuals to shelter at their places of residence (subject to limited exceptions). As a result, we have implemented work-from-home policies for employees and have moved to a "virtual" model with respect to our partner support activities. The effects of government actions and our policies and those of third parties to reduce the spread of the coronavirus may negatively impact productivity, cause disruptions to our supply chain and ongoing and future clinical trials and impair our ability to execute our business development strategy. These and other disruptions in our operations and the global economy could negatively impact our business, operating results and financial condition.

Quarantines, shelter-in-place and similar government orders, or the perception that such orders, shutdowns or other restrictions on the conduct of business operations could occur, related to the coronavirus or other infectious diseases could impact personnel at third-party manufacturing facilities upon which we rely, or the availability or cost of materials, which could disrupt the supply chain for our clinical trials. In particular, certain of our service providers involved in clinical trials are located in regions that have been subject to coronavirus-related actions and policies that limit the conduct of normal business operations. To the extent our suppliers and service providers are unable to comply with their obligations under our agreements with them or they are otherwise unable to deliver or are delayed in delivering goods and services to us due to the coronavirus, our ability to continue advancing development of our product candidates may become impaired.

In addition, our clinical trials have been and may continue to be affected by the coronavirus. In March 2020, as a result of impacts and risks associated with the COVID-19 pandemic, we decided to pause enrollment in our Phase 1b clinical trials of itolizumab (EQ001) in uncontrolled asthma and lupus nephritis. This decision was not based on any observed safety issues associated with itolizumab (EQ001) but rather out of an abundance of caution related to the current global pandemic and our concern for the well-being of patients and their caregivers. In July 2020, we announced that patient enrollment in both of those trials had resumed. We did not pause enrollment of patients in the Phase 1b/2 clinical trial of itolizumab (EQ001) for the treatment of aGVHD given the acute life-threatening severity of the disease as we believe itolizumab (EQ001) represents a potentially life-saving treatment for these severely ill patients. However, there remains a risk that enrollment of that trial as well as enrollment in our recently resumed Phase 1b trials in uncontrolled asthma and lupus nephritis, and the timing of topline data from all three of those trials, may also be adversely impacted by the COVID-19 pandemic. Clinical site initiation and patient enrollment for our ongoing aGVHD trial may be delayed due to prioritization of hospital resources toward the coronavirus. Current or future patients in our ongoing or planned clinical trials may also choose to not enroll, not participate in follow-up clinical visits or drop out of the trial as a precaution against contracting the coronavirus. Further, some patients may not be able or willing to comply with clinical trial protocols if quarantines impede patient movement or interrupt healthcare services. Similarly, our ability to recruit and retain principal investigators and site staff who, as healthcare providers, may have heightened exposure to the coronavirus, may be adversely impacted. These events could delay our clinical trials, increase the cost of completing our clinical trials and negatively impact the integrity, reliability or robustness of the data from our clinical trials.

The spread of the coronavirus and actions taken to reduce its spread may also materially affect us economically. While the potential economic impact brought by, and the duration of, the coronavirus may be difficult to assess or predict, there could be a significant disruption of global financial markets, reducing our ability to access capital, which could in the future negatively affect our liquidity and financial position.

The coronavirus continues to rapidly evolve. The extent to which the coronavirus may impact our clinical trials, our supply chain, our access to capital and our business development activities, will depend on future developments, which are highly uncertain and cannot be predicted with confidence, such as the ultimate geographic spread of the pandemic, the duration of the pandemic and the efforts by governments and business to contain it, business closures or business disruptions and the impact on the economy and capital markets.

We or the third parties upon whom we depend may be adversely affected by earthquakes, fires, other natural disasters, or other sudden, unforeseen and severe adverse events, including public health events, and our business continuity and disaster recovery plans may not adequately protect us from a serious disaster.

Our headquarters and main research facility are located in the Greater San Diego Area, which in the past has experienced severe earthquakes and fires. If these earthquakes, fires, other natural disasters, terrorism and similar unforeseen events beyond our control prevented us from using all or a significant portion of our headquarters or research facility, it may be difficult or, in certain cases, impossible for us to continue our business for a substantial period of time. We do not have a disaster recovery or business continuity plan in place and may incur substantial expenses as a result of the absence or limited nature of our internal or third party service provider 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. Furthermore, integral parties in our supply chain are operating from single sites, increasing their vulnerability to natural disasters or other sudden, unforeseen and severe adverse events, including public health events such as the COVID-19 pandemic that could impact our business. If such an event were to affect our supply chain, it could have a material adverse effect on our ability to conduct our clinical trials, our development plans and business. For example, in March 2020, due to the spread of the coronavirus, the Indian government restricted the export of 26 active pharmaceutical ingredients and the medicines made from them. These export restrictions are indefinite and may be expanded. If the export restrictions are expanded to include itolizumab (EQ001), our supply of itolizumab (EQ001) may be disrupted, delayed or stopped indefinitely and our ability to continue development of itolizumab (EQ001), including our ongoing clinical trials, may be significantly impacted and may result in higher costs of drug product and adversely harm our business.

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

As is the case with other biopharmaceutical companies, our success is heavily dependent on intellectual property, particularly patents relating to our research programs and product candidates. Obtaining and enforcing patents in the biopharmaceutical industry involves both technological and legal complexity and is therefore costly, time consuming and inherently uncertain. Changes in either the patent laws or interpretation of the patent laws in the United States or USPTO rules and regulations could increase the uncertainties and costs. Recent patent reform legislation in the United States and other countries, including the Leahy-Smith America Invents Act, or the Leahy-Smith Act, signed into law on September 16, 2011, could increase those uncertainties and costs surrounding the prosecution of our patent applications and the enforcement or defense of our issued patents. The Leahy-Smith Act includes a number of significant changes to U.S. patent law. These include provisions that affect the way patent applications are prosecuted, redefine prior art and provide more efficient and cost-effective avenues for competitors to challenge the validity of patents. 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. After March 2013, under the Leahy-Smith Act, the United States transitioned to a first inventor to file system in which, assuming that the other statutory requirements 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. However, the Leahy-Smith Act and its implementation could increase the uncertainties and costs surrounding the prosecution of our patent applications, our ability to obtain future patents, and the enforcement or defense of our issued patents, all of which could have a material adverse effect on our business, financial condition, results of operations and prospects.

The U.S. 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. Depending on future actions by the U.S. Congress, the U.S. courts, the USPTO and the relevant law-making bodies in other countries, the laws and regulations governing patents could change in unpredictable ways that would weaken our ability to obtain new patents or to enforce our existing patents and patents that we might obtain in the future.

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

We face an inherent risk of product liability exposure related to the testing of itolizumab (EQ001) and any future product candidates in human clinical trials and will face an even greater risk if we commercially sell any products that we may develop. If we cannot successfully defend ourselves against claims that itolizumab (EQ001) or any future product candidates or products caused injuries, we could incur substantial liabilities. Regardless of merit or eventual outcome, product liability claims may result in:

- delay or termination of clinical trials;

- decreased demand for any product candidates or products that we may develop;
- injury to our reputation and significant negative media attention;
- withdrawal of clinical trial subjects;
- initiation of investigations by regulators;
- significant costs to defend the related litigation and diversion of management's time and our resources;
- substantial monetary awards to study subjects or patients;
- product recalls, withdrawals or labeling, or marketing or promotional restrictions;
- loss of revenue; and
- the inability to commercialize any products that we may develop.

We currently have product liability insurance. However, the amount of insurance may not be adequate to cover all liabilities that we may incur. We anticipate that we will need to increase our insurance coverage as itolizumab (EQ001) and any future product candidates advance through clinical trials and if we successfully commercialize any products. Insurance coverage is increasingly expensive. 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.

Changes in tax laws or regulations that are applied adversely to us or our customers may have a material adverse effect on our business, cash flow, financial condition or results of operations.

New income, sales, use or other tax laws, statutes, rules, regulations or ordinances could be enacted at any time, which could affect the tax treatment of our domestic and foreign earnings. Any new taxes could adversely affect our domestic and international business operations, and our business and financial performance. Further, existing tax laws, statutes, rules, regulations or ordinances could be interpreted, changed, modified or applied adversely to us. For example, on December 22, 2017, U.S. federal income tax legislation was signed into law (H.R. 1, "An Act to provide for reconciliation pursuant to titles II and V of the concurrent resolution on the budget for fiscal year 2018"), informally titled the Tax Cuts and Jobs Act, that significantly revised the Internal Revenue Code of 1986, as amended, or the Code. Future guidance from the Internal Revenue Service and other tax authorities with respect to the Tax Cuts and Jobs Act may affect us, and certain aspects of the Tax Cuts and Jobs Act could be repealed or modified in future legislation. For example, legislation enacted on March 27, 2020, entitled the Coronavirus Aid, Relief, and Economic Security Act, or the CARES Act, modified certain provisions of the Tax Cuts and Jobs Act. In addition, it is uncertain if and to what extent various states will conform to the Tax Cuts and Jobs Act, the CARES Act or any newly enacted federal tax legislation. We do not expect the Tax Cuts and Jobs Act or the CARES Act to have a material impact on our current projection of minimal cash taxes for the near future. However, we continue to examine the impact that the Tax Cuts and Jobs Act and the CARES Act may have on our business in the longer term. We urge prospective investors to consult with their legal and tax advisors with respect to this legislation and the potential tax consequences of investing in or holding our common stock.

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, and the third parties with whom we share our facilities, 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. Each of our operations involve the use of hazardous and flammable materials, including chemicals and biological and radioactive materials. Each of 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. We could be held liable for any resulting damages in the event of contamination or injury resulting from the use of hazardous materials by us or the third parties with whom we share our facilities, and any liability could exceed our resources. We also could incur significant costs associated with civil or criminal fines and penalties.

Although we maintain workers' compensation insurance to cover us for costs and expenses we may incur due to injuries to our employees resulting from the use of hazardous materials, this insurance may not provide adequate coverage against potential liabilities. We do not maintain insurance for environmental liability or toxic tort claims that may be asserted against us in connection with our storage or disposal of biological, hazardous or radioactive materials.

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 and development. Failure to comply with these laws and regulations also may result in substantial fines, penalties or other sanctions.

Our future success depends on our ability to retain key employees, consultants and advisors and to attract, retain and motivate qualified personnel.

Our industry has experienced a high rate of turnover in recent years. Our ability to compete in the highly competitive biopharmaceuticals industry depends upon our ability to attract, retain and motivate highly skilled and experienced personnel with scientific, medical, regulatory, manufacturing and management skills and experience. We conduct our operations in the Greater San Diego Area and the San Francisco Bay Area regions that are home to many other biopharmaceutical companies as well as many academic and research institutions, resulting in fierce competition for qualified personnel. We may not be able to attract or retain qualified personnel in the future due to the intense competition for a limited number of qualified personnel among biopharmaceutical companies. Many of the other biopharmaceutical companies against which we compete have greater financial and other resources, different risk profiles and a longer history in the industry than we do. Our competitors may provide higher compensation, more diverse opportunities and/or better opportunities for career advancement. Any or all of these competing factors may limit our ability to continue to attract and retain high quality personnel, which could negatively affect our ability to successfully develop and commercialize itolizumab (EQ001) or any future product candidates and to grow our business and operations as currently contemplated.

Requirements associated with being a public company will increase our costs significantly, as well as divert significant company resources and management attention.

We are subject to the reporting requirements of the Securities Exchange Act of 1934, as amended, or the Exchange Act, or the other rules and regulations of the SEC, or any securities exchange relating to public companies. The Sarbanes-Oxley Act of 2002, as amended, or Sarbanes-Oxley, as well as rules subsequently adopted by the SEC, and The Nasdaq Global Market to implement provisions of Sarbanes-Oxley, impose significant requirements on public companies, including requiring establishment and maintenance of effective disclosure and financial controls and changes in corporate governance practices. Further, pursuant to the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010, the SEC has adopted additional rules and regulations in these areas, such as mandatory “say on pay” voting requirements that will apply to us when we cease to be an emerging growth company. Stockholder 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. Compliance with the various reporting and other requirements applicable to public companies requires considerable time and attention of management. We cannot assure you that we will satisfy our obligations as a public company on a timely basis.

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. In addition, as a public company, it may be more difficult or more costly for us to obtain certain types of insurance, including directors’ and officers’ liability insurance, and we may be forced to accept reduced policy limits and coverage or incur substantially higher costs to obtain the same or similar coverage. The impact of these events could also make it more difficult for us to attract and retain qualified personnel to serve on our board of directors, our board committees or as executive officers.

We will have broad discretion in the use of working capital and may not use it effectively or in ways that increase the value of our share price.

We cannot specify with any certainty the particular uses of working capital, but we currently expect such uses will include funding research and development of itolizumab (EQ001) and general corporate purposes as well as potentially acquiring additional products. We will have broad discretion in the application of working capital, and you and other stockholders may disagree with how we spend or invest the working capital. The failure by our management to apply our working capital effectively could adversely affect our business and financial condition. Pending their use, we may invest working capital in a manner that does not produce income or that loses value. These investments may not yield a favorable return to our investors.

If securities or industry analysts do not publish research or publish inaccurate or unfavorable research about our business, our stock price and trading volume could decline.

The trading market for our common stock 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 downgrade our common stock or publish inaccurate or unfavorable research about our business, our common stock price would likely decline. If one or more of these analysts cease coverage of us or fail to publish reports on us regularly, demand for our common stock could decrease, which might cause our common stock price and trading volume to decline.

Our disclosure controls and procedures may not prevent or detect all errors or acts of fraud.

We are subject to the periodic reporting requirements of the Exchange Act. We designed our disclosure controls and procedures to reasonably assure that information we must disclose in reports we file or submit under the Exchange Act is accumulated and communicated to management, and recorded, processed, summarized and reported within the time periods specified in the rules and forms of the SEC.

We believe that any disclosure controls and procedures or internal controls and procedures, no matter how well-conceived and operated, can provide only reasonable, not absolute, assurance that the objectives of the control system are met.

These inherent limitations include the realities that judgments in decision-making can be faulty, and that breakdowns can occur because of simple error or mistake. For example, our directors or executive officers could inadvertently fail to disclose a new relationship or arrangement causing us to fail to make any related party transaction disclosures. Additionally, controls can be circumvented by the individual acts of some persons, by collusion of two or more people or by an unauthorized override of the controls. Accordingly, because of the inherent limitations in our control system, misstatements due to error or fraud may occur and not be detected. In addition, we do not have a risk management program or processes or procedures for identifying and addressing risks to our business in other areas.

We are an "emerging growth company," and we cannot be certain if the reduced reporting requirements applicable to emerging growth companies will make our common stock less attractive to investors.

We are an "emerging growth company" as defined in the Jumpstart Our Business Startups Act of 2012, as amended, or JOBS Act, and we intend to take advantage of some of the exemptions from reporting requirements that are applicable to other public companies that are not emerging growth companies, including:

- being permitted to provide only two years of audited financial statements, in addition to any required unaudited interim financial statements, with correspondingly reduced "Management's Discussion and Analysis of Financial Condition and Results of Operations" disclosure;
- not being required to comply with the auditor attestation requirements in the assessment of our internal control over financial reporting;
- not being required to comply with any requirement that may be adopted by the Public Company Accounting Oversight Board regarding mandatory audit firm rotation or a supplement to the auditor's report providing additional information about the audit and the financial statements;
- reduced disclosure obligations regarding executive compensation; and
- not being required to hold a non-binding advisory vote on executive compensation or obtain stockholder approval of any golden parachute payments not previously approved.

In addition, as an "emerging growth company" the JOBS Act allows us to delay adoption of new or revised accounting pronouncements applicable to public companies until such pronouncements are made applicable to private companies. We have elected to use this extended transition period under the JOBS Act.

We cannot predict if investors will find our common stock less attractive because we will rely on these exemptions. If some investors find our common stock less attractive as a result, there may be a less active trading market for our common stock and our stock price may be more volatile. We may take advantage of these reporting exemptions until we are no longer an emerging growth company. 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 our initial public offering (i.e. December 31, 2023), (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 means the market value of

our common stock that is held by non-affiliates exceeds $700 million as of the prior June 30th and (2) the date on which we have issued more than $1.0 billion in non-convertible debt during the prior three-year period.

We do not intend to pay dividends for the foreseeable future.

We have never declared nor paid cash dividends on our capital stock. We currently intend to retain any future earnings to finance the operation and expansion of our business, and we do not expect to declare or pay any dividends in the foreseeable future, including due to limitations that are currently imposed by our Loan Agreement. In addition, the terms of any future debt agreements may preclude us from paying dividends. Consequently, stockholders must rely on sales of their common stock after price appreciation, which may never occur, as the only way to realize any future gains on their investment.

We could be subject to securities class action litigation.

In the past, 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 biopharmaceutical companies have experienced significant stock price volatility in recent years. If we face such litigation, it could result in substantial costs and a diversion of management's attention and resources, which could harm our business.

Item 1B. Unresolved Staff Comments.

None.

Item 2. Properties.

We lease approximately 1,750 square feet of space for our current headquarters in La Jolla, California under a lease that expires in February 2022. We also lease approximately 2,050 square feet of space for general office purposes located in South San Francisco, California under a lease that expires in February 2022.

We believe that our existing facilities are adequate to meet our current needs, and that suitable additional alternative spaces will be available in the future on commercially reasonable terms.

Item 3. Legal Proceedings.

None.

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 common stock began trading on the Nasdaq Global Market under the symbol "EQ" on October 12, 2018. Prior to that date, there was no public trading market for our common stock.

Holders of Record

As of March 19, 2021, there were approximately 35 stockholders of record of our common stock. The actual number of stockholders is greater than this number of record holders and includes stockholders who are beneficial owners but whose shares are held in street name by brokers and other nominees. This number of holders of record also does not include stockholders whose shares may be held in trust or by other entities.

Dividend Policy

We have never declared or paid cash dividends on our capital stock. We currently intend to retain all available funds and any future earnings for use in the operation of our business and do not anticipate paying any dividends on our common stock in the foreseeable future, including due to limitations that are currently imposed by our Loan Agreement. Any future determination to declare dividends will be made at the discretion of our board of directors and will depend on, among other factors, our financial condition, operating results, capital requirements, contractual restrictions, general business conditions and other factors that our board of directors may deem relevant.

Securities Authorized for Issuance Under Our Equity Compensation Plans

Information about our equity compensation plans will be included in our definitive proxy statement to be filed with the SEC with respect to our 2021 Annual Meeting of Stockholders and is incorporated herein by reference.

Recent Sales of Unregistered Securities

None.

Use of Proceeds

On October 11, 2018, our Registration Statement on Form S-1 (file No. 333-227387) was declared effective by the SEC for our initial public offering of common stock, or IPO. On October 16, 2018, we sold an aggregate of 4,670,000 shares of common stock and on November 2, 2018, we sold an additional 445,097 shares of common stock pursuant to the underwriters' partial exercise of their option to purchase additional shares, each at an offering price of $14.00 per share, for aggregate gross proceeds of approximately $71.6 million. After deducting underwriting discounts, commissions and offering costs incurred by us of approximately $7.1 million, the net proceeds from the offering were approximately $64.5 million. The joint book-running managers for the offering were Jefferies LLC, Leerink Partners LLC and Stifel, Nicolaus & Company, Incorporated. No offering costs were paid or are payable, directly or indirectly, to our directors or officers, to persons owning 10% or more of any class of our equity securities, or to any of our affiliates.

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 October 12, 2018. Upon receipt, the net proceeds from our IPO were held in cash, cash equivalents and short-term investments. As of December 31, 2020, we have used $45.8 million of the net proceeds from the IPO. Pending such uses, we plan to continue investing the unused proceeds from the IPO in fixed, non-speculative income instruments and money market funds.

Purchases of Equity Securities by the Issuer and Affiliated Purchasers

None.

Item 6. Selected Financial Data.

Not required for smaller reporting companies.

Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations.

You should read the following discussion and analysis of our financial condition and results of operations together with the section entitled "Selected Financial Data" and our consolidated financial statements and related notes appearing elsewhere in this Annual Report on Form 10-K. This discussion and analysis contain forward-looking statements based upon current expectations that involve risks and uncertainties. Our actual results may differ materially from those anticipated in these forward-looking statements as a result of various factors, including those discussed in the section entitled "Risk Factors" and in other parts of this Annual Report on Form 10-K. Please also see the section entitled "Special Note Regarding Forward-Looking Statements."

Overview

We are a clinical-stage biotechnology company leveraging deep understanding of immunobiology to develop products to treat severe autoimmune and inflammatory, or immuno-inflammatory, disorders with high unmet medical need. Our initial product candidate, itolizumab (EQ001), is a clinical-stage, first-in-class monoclonal antibody that selectively targets the novel immune checkpoint receptor CD6. CD6 plays a central role in the modulation of effector T cell, or T_{eff} cell, activity and trafficking. Activated T_{eff} cells drive a number of immuno-inflammatory diseases across therapeutic areas including transplant science, systemic autoimmunity, pulmonary, neurologic, gastrointestinal, renal, vascular, ophthalmic and dermatologic disorders. Therefore, we believe itolizumab (EQ001) may have broad therapeutic utility in treating a large and diverse set of severe immuno-inflammatory diseases.

Our pipeline is focused on developing itolizumab (EQ001) as a potential best-in-class, disease modifying treatment for multiple severe immuno-inflammatory disorders. We currently have active clinical development programs for itolizumab (EQ001) for the treatment of acute graft-versus-host disease, or aGVHD, lupus/lupus nephritis and uncontrolled asthma.

Our Investigational New Drug application, or IND, with the U.S. Food and Drug Administration, or FDA, for aGVHD was accepted in July 2018. The FDA granted itolizumab (EQ001) Fast Track designation for the treatment of aGVHD in December 2018 and Orphan Drug designations for both the prevention and treatment of aGVHD in February 2019. In March 2019, we initiated the EQUATE study, a Phase 1b/2 clinical trial of itolizumab (EQ001) for the treatment of aGVHD. In August 2020, the EQUATE study was amended to (a) expand the eligibility criteria to include patients with Grade II aGVHD who have more severe disease as indicated by elevations in Magic Algorithm Probability biomarkers, which predict a greater severity of aGVHD and (b) extend the dosing window of itolizumab (EQ001) from three to seven days after first administration of steroid treatment. In August 2020, we reported positive interim data from the first two cohorts of the Phase 1b part of this trial, and in November 2020, we reported positive interim data through the third dosing cohort. In November 2020, we expanded enrollment in the second and third cohorts in order to collect additional clinical data at those two dosing levels. In February 2021, we submitted a protocol amendment to the FDA to allow for further expansion of enrollment of additional patients until we initiate the next phase of development in aGVHD.

In June 2019, we initiated the EQUIP study, a Phase 1b clinical trial for the treatment of uncontrolled asthma. That study is enrolling patients in Australia and New Zealand.

In July 2019, our IND for lupus/lupus nephritis was accepted by the FDA, and we initiated the EQUALISE study, a Phase 1b proof-of-concept multiple ascending dose clinical trial for the treatment of lupus nephritis in September 2019. The FDA granted itolizumab (EQ001) Fast Track designation for the treatment of lupus nephritis in December 2019. The first part of the EQUALISE study is focused on evaluating the safety of itolizumab in patients with SLE followed by a second part in lupus nephritis patients where, in addition to safety, potential clinical activity of itolizumab (EQ001) will be assessed. In September 2020, our EQUALISE study was amended to test doses up to 3.2 mg/kg in lupus nephritis patients, allow for a longer duration of treatment up to 26 weeks, and to change the design to an open-label study.

In March 2020, as a result of impacts and risks associated with the COVID-19 pandemic, we decided to pause enrollment in our Phase 1b clinical trials of itolizumab (EQ001) in uncontrolled asthma and lupus nephritis. This decision was not based on any observed safety issues associated with itolizumab (EQ001) but rather out of an abundance of caution related to the COVID-19 pandemic and our concern for the well-being of patients and their caregivers. In July 2020, we announced that patient enrollment in both of those trials had resumed. We did not pause enrollment of patients in the Phase 1b/2 clinical trial of itolizumab (EQ001) for the treatment of aGVHD given the acute life-threatening severity of the disease as we believe itolizumab (EQ001) represents a potentially life-saving treatment for these severely ill patients. However, there remains a risk that enrollment of that trial, as well as the recently resumed Phase 1b trials in uncontrolled asthma and lupus nephritis, in addition to the timing of topline data from all three of those trials may also be adversely impacted by the COVID-19 pandemic.

We acquired rights to itolizumab (EQ001) for the territories of the United States and Canada in May 2017 pursuant to a collaboration and license agreement with Biocon SA (subsequently assigned to Biocon Limited, or together, Biocon). In

December 2019, we expanded our rights to itolizumab (EQ001) to include the territories of Australia and New Zealand pursuant to an amendment to that agreement. In August 2019, we entered into a letter agreement with Biocon that grants us exclusive rights to negotiate licensing rights with third parties to develop and commercialize itolizumab (EQ001) in select major markets outside of North America. This letter agreement allows us to represent itolizumab (EQ001) more broadly commercially and participate in value that may be created with strategic partners across geographies. Our collaboration with Biocon includes an exclusive supply agreement for clinical and commercial drug product of itolizumab (EQ001). Biocon currently manufactures itolizumab (EQ001) at commercial scale in a facility in India regulated by the FDA.

Following completion of a Phase 3 clinical trial conducted by Biocon outside of North America, itolizumab was approved in 2012 in India for the treatment of moderate to severe plaque psoriasis and has since been marketed by Biocon in India as ALZUMAb. More recently, following a randomized, controlled study of itolizumab in hospitalized patients with COVID-19 conducted by Biocon, in July 2020 the DCGI granted restricted emergency use approval of itolizumab for the treatment of CRS in COVID-19 patients with moderate to severe ARDS. In September 2020, the DCGI granted approval of itolizumab produced in a CHO cell line, marketed in India under the brand name ALZUMAb-L, or ALZUMAb Lyophilized, for the treatment of plaque psoriasis, as well as emergency use authorization for the treatment of CRS in COVID-19 patients with moderate to severe ARDS.

Based on the encouraging results observed in Biocon's COVID-19 study, the novel and differentiated T cell modulating mechanism of action of itolizumab, and the fact that no targeted immuno-modulating therapies were approved to treat COVID-19 patients, we advanced our plan to develop itolizumab to treat hospitalized patients with COVID-19. In September 2020, we completed our Pre-IND meeting with the FDA and in October 2020, we filed an IND with the FDA to conduct a global Phase 3, randomized, double-blind, placebo-controlled clinical trial of itolizumab (EQ001) in COVID-19 patients. In October 2020, we received a Study May Proceed letter from the FDA. In November 2020, we announced that due to the rapidly evolving COVID-19 treatment landscape, we elected not to initiate the EQUINOX Phase 3 clinical trial to evaluate itolizumab in hospitalized COVID-19 patients. We continue to evaluate additional indications for future development.

We have ongoing translational biology programs to assess the therapeutic utility of itolizumab (EQ001) in additional indications where CD6 and its ligand, ALCAM, play an important role in the pathogenesis of T cell mediated diseases. Our selection of current and future indications is driven by our analysis of the scientific, translational, clinical and commercial rationale for advancing itolizumab (EQ001) into further development.

Since our inception, substantially all of our efforts have been focused on organizing and staffing our company, business planning, raising capital, in-licensing rights to itolizumab (EQ001), conducting preclinical research, filing three INDs, conducting clinical development of itolizumab (EQ001) and the general and administrative activities associated with operating as a public company. We have not generated any revenue from product sales or otherwise. Since inception, we have primarily financed our operations through our initial public offering, or IPO, a follow-on public offering, private placements of convertible promissory notes, term loans and sales of our common stock through "at-the-market" sales agreements, or ATM offerings, with Jefferies LLC, or Jefferies. We have incurred losses since our inception. Our net losses were $29.8 million for the year ended December 31, 2020 and $25.6 million for the year ended December 31, 2019. As of December 31, 2020, we had an accumulated deficit of $70.9 million. Substantially all of our operating losses resulted from expenses incurred in connection with our research and development activities, preclinical and clinical activities and general and administrative costs associated with our operations.

We expect to continue to incur significant expenses and increasing losses into the foreseeable future. We anticipate our expenses will increase substantially as we continue our research and development activities, including the ongoing and future clinical development of itolizumab (EQ001), potentially expand the indications in which we conduct clinical development of itolizumab (EQ001), potentially acquire additional products and/or product candidates, seek regulatory approval for and potentially commercialize any approved product candidates, hire additional personnel, protect our intellectual property, incur increasing expense associated with our outstanding debt, and incur general corporate costs. We expect that our existing cash, cash equivalents and short-term investments as of December 31, 2020, will enable us to fund our currently planned operations for at least the next 12 months.

We do not expect to generate any revenues from product sales unless and until we successfully complete development and obtain regulatory approval for itolizumab (EQ001) or any future product candidate, which is unlikely to happen within the next 12 months, if ever. Accordingly, until such time as we can generate significant revenue from sales of our product candidates, if ever, we expect to finance our cash needs through a combination of equity offerings, debt financings, and collaboration and license agreements. However, we may not be able to secure additional financing or enter into such other arrangements in a timely manner or on favorable terms, if at all. As a result of the COVID-19 pandemic and actions taken to slow its spread, the global credit and financial markets have experienced extreme volatility, including diminished liquidity and credit availability, declines in consumer confidence, declines in economic growth, increases in unemployment rates and uncertainty about

economic stability. There can be no assurance that further deterioration in credit and financial markets and confidence in economic conditions will not occur. If equity and credit markets deteriorate, it may make any necessary debt or equity financing more difficult to obtain, more costly and/or more dilutive. In addition, subject to limited exceptions, our loan and security agreement with Oxford Finance LLC and Silicon Valley Bank also prohibits us from incurring indebtedness without the prior written consent of the lenders, which consent may be withheld at their sole and absolute discretion. Our failure to raise capital or enter into such other arrangements when needed would have a negative impact on our financial condition and could force us to delay, reduce or terminate our research and development programs or other operations, or grant rights to develop and market product candidates that we would otherwise prefer to develop and market ourselves.

Financial Overview

Revenue

We currently have no products approved for sale, and we have not generated any revenues to date. In the future, we may generate revenue from collaboration or license agreements we may enter into with respect to our product candidates, as well as product sales from any approved product, which approval is unlikely to happen within the next 12 months, if ever. Our ability to generate product revenues will depend on the successful development and eventual commercialization of itolizumab (EQ001) and any future product candidates. If we fail to complete the development of itolizumab (EQ001) or any future product candidates in a timely manner, or to obtain regulatory approval for our product candidates, our ability to generate future revenue and our results of operations and financial position would be materially adversely affected.

Research and Development Expenses

Research and development expenses primarily consist of costs associated with our research and development activities, preclinical activities, and clinical development of itolizumab (EQ001). Our research and development expenses include:

- salaries and other related costs, including stock-based compensation and benefits, for personnel in research and development functions;
- external research and development expenses incurred under arrangements with third parties, such as consultants and advisors for research and development;
- costs of services performed by third parties, such as contract research organizations, or CROs, that conduct research and development and preclinical activities on our behalf;
- costs related to preparing and filing three INDs with the FDA and other regulatory interactions and submissions;
- external expenses related to chemistry, manufacturing, and controls (CMC) and supply of drug product; and
- costs related to general overhead expenses such as travel, insurance and rent expenses associated with our research and development activities.

We expense research and development costs as incurred. We account for nonrefundable advance payments for goods and services that will be used in future research and development activities as expenses when the service has been performed or when the goods have been received.

Our direct research and development expenses consist principally of external costs, such as fees paid to CROs and consultants in connection with our preclinical and clinical development.

We recognize the Australian Research and Development Tax Incentive, or the Tax Incentive, as a reduction of research and development expense. The amounts are determined based on our assumed eligible research and development expenditures and are non-refundable, provided that in order to qualify for the Tax Incentive the filing entity must have revenue of less than AUD $20.0 million during the tax year for which a reimbursement claim is made and cannot be controlled by an income tax exempt entity. The Tax Incentive is recognized when there is reasonable assurance that the Tax Incentive will be received, the relevant expenditure has been incurred, and the amount can be reliably measured or reliably estimated.

We plan to substantially increase our research and development expenses for the foreseeable future as we continue to advance the development of itolizumab (EQ001) and potentially expand the number of indications for which we are developing itolizumab (EQ001). The successful development of itolizumab (EQ001) is highly uncertain. At this time, due to the inherently unpredictable nature of preclinical and clinical development, which has been further exacerbated by the uncertain magnitude, extent and duration of impacts associated with the COVID-19 pandemic, we cannot reasonably estimate the nature, timing or costs of the efforts that will be necessary to complete the remainder of the development of itolizumab (EQ001) or the period, if

any, in which material net cash inflows from itolizumab (EQ001) may commence. Clinical development timelines, the probability of success, and development costs can differ materially from expectations.

Completion of clinical trials may take several years or more, and the length of time generally varies according to the type, complexity, novelty, and intended use of a product candidate. The cost of clinical trials may vary significantly over the life of a project as a result of differences arising during clinical development, including, among others:

- managing the impact of COVID-19 pandemic and related precautions on the operation of our clinical trials;
- per patient clinical trial costs;
- the number of clinical trials required for approval;
- the number of sites and the number of countries included in our clinical trials;
- the length of time required to enroll suitable patients;
- the inefficiencies and additional costs related to any delays and potential restarts of clinical trials;
- the number of doses that patients receive;
- the number of patients that participate in our clinical trials;
- the drop-out or discontinuation rates of patients in our clinical trials;
- the duration of patient follow-up;
- potential additional safety monitoring or other studies requested by regulatory agencies;
- the number and complexity of procedures, analyses and tests performed during our clinical trials;
- the costs of procuring drug product for our clinical trials;
- the phase of development of the product candidate; and
- the efficacy and safety profile of the product candidate.

General and Administrative Expenses

General and administrative expenses consist primarily of salaries and other related costs, including stock-based compensation and benefits, and consulting fees for executive, human resources, investor relations, finance, and accounting functions. Other significant costs include legal fees relating to patent and corporate matters, insurance, travel, board expenses, facility costs and taxes.

We anticipate that our general and administrative expenses will increase in future periods, reflecting an expanding infrastructure, increased legal, audit, tax and other professional fees associated with being a public company and maintaining compliance with stock exchange listing and SEC requirements, director and officer insurance premiums associated with being a public company, and accounting and investor relations costs. In addition, if we obtain regulatory approval for any product candidate, we expect to incur expenses associated with building the infrastructure and capabilities to commercialize such product. However, the timing of any such approval is highly uncertain, and it may be several years, if ever, that we receive any such regulatory approval.

Interest Expense

Interest expense consists of interest and amortization of discounts on our outstanding term notes payable.

Interest Income

Interest income consists primarily of interest income earned on cash, cash equivalents and short-term investments, and is recognized when earned.

Other Income, Net

Other income, net consists primarily of net foreign currency transaction gains related to our Australian subsidiary.

Results of Operations

Comparison of the Years Ended December 31, 2020 and 2019

The following table sets forth our results of operations for the years ended December 31, 2020 and 2019 (in thousands):

	Year Ended December 31, 2020	Year Ended December 31, 2019	Increase
Research and development	$ 19,384	$ 17,640	$ 1,744
General and administrative	10,164	9,087	1,077
Interest expense	(1,099)	(279)	(820)
Interest income	476	1,391	(915)
Other income, net	358	15	343

Research and Development Expenses

Research and development expenses were $19.4 million for the year ended December 31, 2020, compared to $17.6 million for the year ended December 31, 2019. The increase in research and development expense primarily includes the following changes:

- $2.4 million increase in employee compensation and benefits, primarily related to increased headcount;
- $1.0 million decrease in research and development expenses associated with the recording of a Tax Incentive benefit from the Australian Taxation Office, or ATO, as a reduction to research and development expenses. Additional information related to our Australian Tax Incentive benefit is provided in the next paragraph;
- $0.7 million increase in clinical development activities, primarily driven by expenses related to start-up costs associated with our planned COVID-19 trial, which in the fourth quarter of 2020, we elected not to initiate, as well as an increase in expenses related to our lupus nephritis clinical trial, offset by a reduction in expenses related to our asthma clinical trial;
- $0.5 million decrease in overhead expenses primarily related to decreased travel expenses associated with our research and development activities, much of which resulted from the impact associated with the COVID-19 pandemic; and
- $0.2 million increase in preclinical research activities.

In January 2019, we formed a wholly-owned Australian subsidiary, Equillium Australia Pty Ltd, to conduct clinical development of itolizumab (EQ001) for the treatment of uncontrolled asthma. The Tax Incentive under current Australian tax regulations provides for a 43.5% refundable research and development tax credit associated with qualified research and development activities performed in Australia. In August 2020, we received cash totaling $0.7 million related to our initial Tax Incentive claim for the fiscal year ended December 31, 2019. We recorded the cash received as a reduction to research and development expenses during the year ended December 31, 2020. In addition, since we have established history in filing and receiving the Tax Incentive for our fiscal year ended December 31, 2019 with the ATO, we recorded an estimated tax benefit totaling $0.3 million for qualified research and development activities for the year ended December 31, 2020, and recorded it as a reduction to research and development expenses. The estimated tax benefit is recognized when there is reasonable assurance that the tax benefit will be received, the relevant expenditure has been incurred, and the amount can be reliably measured or reasonably estimated.

General and Administrative Expenses

General and administrative expenses were $10.2 million for the year ended December 31, 2020, compared to $9.1 million for the year ended December 31, 2019. The increase in general and administrative expense primarily includes the following changes:

- $0.8 million increase in employee compensation and benefits, primarily due to increased non-cash stock-based compensation of $1.0 million, of which approximately $0.4 million pertains to non-cash stock-based compensation associated with fully-vested retention option grants issued to our Chief Executive Officer, our Executive Chairman and two non-management directors partially offset by lower salary expense. Additional information related to these changes in non-cash stock-based compensation and salary expenses is provided in the next paragraph;

- $0.5 million increase in corporate consulting expenses; and
- $0.2 million decrease in travel expenses, much of which resulted from the impact associated with the COVID-19 pandemic.

On May 28, 2020, our board of directors issued retention stock options to purchase an aggregate of 169,368 shares of our common stock to our Executive Chairman, Chief Executive Officer and two non-management directors. These stock options immediately vested at the grant date and resulted in a $0.4 million charge to non-cash stock-based compensation in the year ended December 31, 2020. At the time, the Executive Chairman and Chief Executive Officer voluntarily agreed to a 65% and an 85% reduction, respectively, in their base salaries otherwise payable for the remainder of 2020. The two non-management directors voluntarily agreed to forego 100% of their annual cash retainers otherwise payable to such directors for the remainder of 2020. The voluntary reductions in salary and retainers reduced expenses by approximately $0.4 million in calendar year 2020. There was no similar non-cash stock-based compensation charge in the year ended December 31, 2019.

Interest Expense

Interest expense was $1.1 million for the year ended December 31, 2020, compared to $0.3 million for the year ended December 31, 2019. The increase in interest expense was primarily due to higher interest expense on our term notes payable in 2020 compared to 2019. We entered into our term notes payable in late September 2019.

Interest Income

Interest income was $0.5 million for the year ended December 31, 2020, as compared to $1.4 million for the year ended December 31, 2019. The decrease in interest income was primarily due to lower interest rates on our short-term investments during 2020 compared to 2019.

Other Income, Net

Other income, net was $0.4 million for the year ended December 31, 2020, as compared to $15,000 for the year ended December 31, 2019. The increase in other income, net during 2020 compared to 2019 related primarily to net foreign currency transaction unrealized gains.

Liquidity and Capital Resources

From inception through December 31, 2020, we raised an aggregate of approximately $148.1 million in gross proceeds pursuant to our IPO, follow-on public offering, private placements of convertible promissory notes, proceeds from term loans and proceeds from equity issuances under our ATM facilities. As of December 31, 2020, we had $24.0 million in cash and cash equivalents and $58.2 million in short-term investments.

Sources of Liquidity

Registered Direct Offering

In February 2021, we entered into a securities purchase agreement with two institutional investors relating to the issuance and sale of an aggregate of 4,285,710 shares of common stock and warrants to purchase 1,285,713 shares of common stock for aggregate gross proceeds to us from this offering of approximately $30.0 million, excluding any proceeds we may receive upon exercise of the warrants. No underwriter or placement agent participated in the offering. The warrants are exercisable immediately upon issuance at an initial exercise price of $14.00 per share and are exercisable on a cashless basis. The warrants expire on the earlier of (i) the fifth anniversary of issuance or (ii) the 15th calendar date following the date on which we close upon an equity financing that results in not less than $25 million in gross proceeds to us at a price per share of common stock equal to or greater than $25.00, at which time, all remaining warrants will automatically exercise on a cashless basis.

Follow-on Public Offering

In August 2020, we completed an underwritten public offering of 5,461,169 shares of common stock at $7.00 per share, which included 461,169 shares sold pursuant to the exercise of the underwriters' option to purchase additional shares. We received gross proceeds from this offering totaling $38.2 million. Net proceeds from this offering, net of underwriting discounts and related issuance costs, were $35.7 million.

2020 Purchase Agreement

In March 2020, we entered into a purchase agreement, or the Purchase Agreement, with Lincoln Park Capital Fund, LLC, or Lincoln Park, which provides that, upon the terms and subject to the conditions and limitations set forth therein, we may sell to Lincoln Park up to $15.0 million of shares of our common stock from time to time over the 36-month term of the Purchase Agreement. Upon execution of the Purchase Agreement, we issued 65,374 shares of our common stock to Lincoln Park as commitment shares in accordance with the closing conditions contained within the Purchase Agreement. We have not sold any shares of our common stock to Lincoln Park under the Purchase Agreement through the date of the filing of this Annual Report on Form 10-K.

At-the-Market Offering Program

In November 2019, we entered into an Open Market Sales Agreement℠ with Jefferies to sell shares of our common stock having aggregate sales proceeds of up to $8.45 million, from time to time, through an ATM equity offering program under which Jefferies acts as sales agent, or the 2019 ATM Facility. Under the 2019 ATM Facility, we set certain parameters for the sale of shares, which may include but are not limited to the number of shares to be issued, the time period during which sales are requested to be made, and any minimum price below which sales may not be made. Jefferies was entitled to compensation for its services at a commission rate of 3.0% of the gross sales price per share of common stock sold plus reimbursement of certain expenses. As of December 31, 2020, the 2019 ATM Facility had been fully utilized. We sold an aggregate of 943,739 shares of our common stock under the 2019 ATM Facility for gross proceeds of $8.45 million.

On July 14, 2020, we entered into another Open Market Sales Agreement with Jefferies for a new ATM equity offering to sell shares of our common stock, from time to time, having aggregate sales proceeds of up to $150 million under which Jefferies would act as sales agent, or the 2020 ATM Facility. The 2020 ATM Facility provides that Jefferies is entitled to compensation for its services at a commission rate of 3.0% of the gross sales price per share of common stock sold. We are not obligated to make any sales under the 2020 ATM Facility. As of December 31, 2020, we sold an aggregate of 788,685 shares of common stock under the 2020 ATM Facility, for gross proceeds of $10.4 million. We paid cash commissions on the gross proceeds, plus reimbursement expenses to Jefferies, legal fees and other issuance costs in the aggregate amount of $0.4 million, resulting in net proceeds of $10.0 million. There have been no further sales of shares under the 2020 ATM Facility through the date of the filing of this Annual Report on Form 10-K

September 2019 Loan Agreement

In September 2019, we entered into a loan and security agreement, or Loan Agreement, with Oxford Finance LLC and Silicon Valley Bank, or together, the Lenders, pursuant to which we can borrow up to $20.0 million in a series of term loans. Upon entering into the Loan Agreement, we borrowed $10.0 million, or Term A Loan. Under the terms of the Loan Agreement, we may, at our sole discretion, borrow from the Lenders (i) up to an additional $5.0 million, or Term B Loan, upon our achievement of positive topline data in either our (a) itolizumab (EQ001) Phase 1b aGVHD trial or (b) itolizumab (EQ001) Phase 1b asthma trial, supporting a formal decision to advance into Phase 2 development, and as confirmed by our Board of Directors, or the Term B Milestone, and (ii) up to an additional $5.0 million, or Term C Loan and together with Term A Loan and Term B Loan, the Term Loans, upon our achievement of positive topline data in both our EQ001 Phase 1b aGVHD trial and our itolizumab (EQ001) Phase 1b asthma trial, supporting a formal decision to advance into Phase 2 development, and as confirmed by our Board of Directors, or the Term C Milestone. We may draw the Term B Loan during the period commencing on the date of the occurrence of the Term B Milestone and ending on the earliest of (i) December 31, 2020, (ii) 60 days after achieving the Term B Milestone, and (iii) the occurrence of an event of default and may draw the Term C Loan during the period commencing on the date of the occurrence of the Term C Milestone and ending on the earliest of (i) December 31, 2020, (ii) 60 days after achieving the Term C Milestone, and (iii) the occurrence of an event of default. As of December 31, 2020, we did not achieve the Term B or Term C Milestone and were not eligible to borrow the additional $10 million under the Loan Agreement.

Funding Requirements

We expect our expenses to increase substantially in connection with our ongoing and future activities, particularly as we advance and expand our clinical development of itolizumab (EQ001), including potential new indications. We expect that our primary uses of capital will be for clinical research and development services, preclinical research, manufacturing, legal and other regulatory compliance expenses, compensation and related expenses, risk management, and general overhead costs.

We expect that our existing cash, cash equivalents and short-term investments as of December 31, 2020 will enable us to fund our currently planned operations for at least the next 12 months. We have based this estimate on assumptions that may prove to be wrong, and we could use our capital resources sooner than we expect. Furthermore, our operating plans may change, and we may need additional funds sooner than planned. Additionally, the process of testing product candidates in clinical trials is

costly, and the timing of progress in these trials is uncertain. Because the outcome of these efforts is uncertain, we cannot estimate the actual amounts necessary to successfully complete the development and commercialization of itolizumab (EQ001) or whether, or when, we may achieve profitability.

Our future capital requirements will depend on many factors, including:

- the initiation, progress, timing, costs and results of our ongoing and future clinical trials of itolizumab (EQ001), including as such activities may be adversely impacted by the COVID-19 pandemic;
- the number and scope of indications we decide to pursue for itolizumab (EQ001) development;
- the cost, timing and outcome of regulatory review of any Biologics License Application, or BLA, we may submit for itolizumab (EQ001);
- the costs and timing of manufacturing for itolizumab (EQ001), if approved;
- the costs of preparing, filing and prosecuting patent applications, maintaining and enforcing our intellectual property rights and defending intellectual property-related claims;
- our efforts to enhance operational systems and our ability to attract, hire and retain qualified personnel, including personnel to support the development of itolizumab (EQ001);
- the costs associated with being a public company;
- the terms and timing of establishing and maintaining collaborations, licenses and other similar arrangements;
- the extent to which we acquire or in-license other product candidates and technologies; and
- the cost associated with commercializing itolizumab (EQ001), if approved for commercial sale.

Until such time as we can generate substantial product revenues, if ever, we expect to finance our cash needs through a combination of equity offerings, debt financings, and collaboration and license agreements. The sale of additional equity or convertible debt could result in additional dilution to our stockholders and the terms of these securities may include liquidation or other preferences that adversely affect the rights of our existing common stockholders. The incurrence of debt financing would result in debt service obligations and the governing documents would likely include operating and financing covenants that would restrict our operations. As a result of the COVID-19 pandemic and actions taken to slow its spread, the global credit and financial markets have experienced extreme volatility, including diminished liquidity and credit availability, declines in consumer confidence, declines in economic growth, increases in unemployment rates and uncertainty about economic stability. There can be no assurance that further deterioration in credit and financial markets and confidence in economic conditions will not occur. If equity and credit markets deteriorate, it may make any necessary debt or equity financing more difficult to obtain, more costly and/or more dilutive. If we raise additional funds through collaboration or license agreements, we may have to relinquish valuable rights to our technologies, future revenue streams, research programs or product candidates or grant licenses on terms that may not be favorable to us and/or that may reduce the value of our common stock. If we are unable to raise capital when needed or on attractive terms, we would be forced to delay, reduce or eliminate our research and development programs or other operations. Any of these actions could have a material effect on our business, financial condition and results of operations. We have experienced net losses and negative cash flows from operating activities since our inception and expect to continue to incur net losses into the foreseeable future. We had an accumulated deficit of $70.9 million as of December 31, 2020. We expect operating losses and negative cash flows to continue for at least the next several years as we continue to incur costs related to the development of itolizumab (EQ001).

Cash Flows

The following table sets forth the primary sources and uses of cash for each of the periods set forth below (in thousands):

	Year Ended December 31, 2020	Year Ended December 31, 2019
Net cash provided by (used in):		
Operating activities	$ (24,624)	$ (22,949)
Investing activities	(18,592)	(2,166)
Financing activities	53,945	9,836
Effect of exchange rate changes on cash	34	(10)
Net increase (decrease) in cash and cash equivalents	$ 10,763	$ (15,289)

Operating Activities

Net cash used in operating activities during the year ended December 31, 2020 primarily consisted of a net loss of $29.8 million adjusted for net non-cash expenses of $3.9 million and net changes in operating assets and liabilities of $1.3 million. The primary non-cash expense adjustment to net loss was stock-based compensation. Cash flow impact from net changes in operating assets and liabilities was mainly driven by increases in accounts payable and accrued expenses totaling $1.8 million primarily due to higher clinical and pre-clinical activity resulting in increased accounts payable and accrued expenses, higher employee compensation accruals associated with increased headcount, partially offset by increases in prepaid expenses and other current assets totaling $0.5 million mainly due to the recording of an estimated tax benefit for qualified research and development and development activities in Australia.

Net cash used in operating activities during the year ended December 31, 2019 primarily consisted of net loss of a $25.6 million adjusted for non-cash expenses of $2.0 million and net changes in operating assets and liabilities of $0.7 million. The primary non-cash expense adjustment to net loss was stock-based compensation. Cash flow impact from net changes in operating assets and liabilities was mainly driven by increases in accounts payable and accrued expenses totaling $1.8 million primarily due to higher clinical trial costs as well as higher bonus compensation accruals partially offset by increased prepaid expenses and other current assets primarily related to higher prepaid clinical costs and director and officer insurance premiums totaling $1.1 million.

Investing Activities

Net cash used in investing activities was $18.6 million during the year ended December 31, 2020. We purchased $55.5 million of short-term investments and $37.1 million of our short-term investments matured during the period. Purchases of property and equipment for the year ended December 31, 2020 totaled $0.2 million.

Net cash used in investing activities totaled $2.2 million during the year ended December 31, 2019. We purchased $54.6 million of short-term investments and $52.5 million of our short-term investments matured during the period. Purchases of property and equipment for the year ended December 31, 2019 totaled $0.1 million.

Financing Activities

Net cash provided by financing activities totaled $53.9 million during the year ended December 31, 2020. We received net proceeds from the sale of shares related to our follow-on public offering totaling $35.7 million, net proceeds from the sale of shares under our ATM facilities totaling $18.1 million and proceeds from both the issuance of shares under our employee stock purchase plan and proceeds from the exercise of stock options totaling $0.2 million.

Net cash provided by financing activities totaled $9.8 million during the year ended December 31, 2019. We received net proceeds from the issuance of term notes payable totaling $9.9 million and proceeds from both the exercise of stock options and the sale of shares under our employee stock purchase plan totaling $0.1 million, offset by a net use of cash of $0.2 million related to the 2019 ATM facility costs offset by the sale of shares under the 2019 ATM facility.

Off-Balance Sheet Arrangements

We did not have during the periods presented, and we do not currently have, any off-balance sheet arrangements, as defined under SEC rules, and similarly did not and do not have any holdings in variable interest entities.

Critical Accounting Policies and Estimates

Our management's discussion and analysis of our financial condition and results of operations is based on our consolidated financial statements, which have been prepared in accordance with generally accepted accounting principles in the United States. The preparation of our consolidated financial statements requires us to make estimates and assumptions that affect the reported amounts of assets, liabilities and expenses and the disclosure of contingent assets and liabilities in our consolidated financial statements and accompanying notes. We evaluate these estimates on an ongoing basis. We base our estimates on historical experience and on various other factors that we believe are reasonable under the circumstances, the results of which form the basis for making judgments about the carrying value 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 our significant accounting policies are more fully described in Note 2 to our consolidated financial statements appearing elsewhere in this Annual Report on Form 10-K, we believe that the following accounting policies are the most critical for fully understanding and evaluating our financial condition and results of operations.

Accrued Research and Development Expense

We are required to estimate our expenses resulting from our obligations under contracts with vendors, consultants and contract research organizations, in connection with conducting research and development activities. The financial terms of these contracts are subject to negotiations, which vary from contract to contract and may result in payment flows that do not match the periods over which materials or services are provided under such contracts. We reflect research and development expenses in our consolidated financial statements by matching those expenses with the period in which services and efforts are expended. We account for these expenses according to the progress of the preclinical or clinical study as measured by the timing of various aspects of the study or related activities. We determine accrual estimates through review of the underlying contracts along with preparation of financial models taking into account discussions with research and other key personnel as to the progress of studies, or other services being conducted. During the course of a study, we adjust our rate of expense recognition if actual results differ from our estimates.

Although we do not expect our estimates to be materially different from amounts actually incurred, if our estimates of the status and timing of services performed differ from the actual status and timing of services performed, it could result in us reporting amounts that are too high or too low in any particular period. To date, there have been no material differences between our estimates of such expenses and the amounts actually incurred.

Stock-based Compensation Expense

We measure employee and non-employee stock-based awards, including stock options and stock purchase rights, at grant-date fair value and record compensation expense on a straight-line basis over the vesting period of the award. We use the Black-Scholes option pricing model to value our stock option awards. Estimating the fair value of stock option awards requires management to apply judgment and make estimates of certain assumptions, including the volatility of our common stock, the expected term of our stock options and the expected dividend yield on the measurement date. As a result, if factors change and management uses different assumptions, stock-based compensation expense could be materially different for future awards.

Income Taxes

We account for income taxes under the asset and liability method, which requires the recognition of deferred tax assets and liabilities for the expected future tax consequences that have been included in the consolidated financial statements. Under this method, deferred tax assets and liabilities are determined on the basis of the differences between the consolidated financial statements and tax basis of assets and liabilities using enacted tax rates in effect for the year in which the differences are expected to reverse. We record a full valuation allowance against net deferred tax assets unless, based upon the available evidence, it is more likely than not that the deferred tax assets will be realized.

We record uncertain tax positions on the basis of a two-step process whereby (i) management determines whether it is more likely than not that the tax positions will be sustained on the basis of the technical merits of the position and (ii) for those tax positions that meet the more likely-than-not recognition threshold, management recognizes the largest amount of tax benefit that is more than 50 percent likely to be realized upon ultimate settlement with the related tax authority. We will recognize interest and penalties in income tax expense if and when incurred.

Recent Accounting Pronouncements

See Note 1 to our consolidated financial statements included elsewhere in this Annual Report on Form 10-K for information concerning recent accounting pronouncements.

Item 7A. Quantitative and Qualitative Disclosures About Market Risk.

Not required for smaller reporting companies.

Item 8. Financial Statements and Supplementary Data.

The financial statements and supplementary data required by this item are included after the signature page of this Annual Report on Form 10-K beginning on page F-1.

Item 9. Changes in and Disagreements With Accountants on Accounting and Financial Disclosure.

None.

Item 9A. Controls and Procedures.

Evaluation of Disclosure Controls and Procedures

We maintain disclosure controls and procedures that are designed to ensure that information required to be disclosed in our periodic and current reports that we file with the SEC is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms, and that such information is accumulated and communicated to our management, including our Chief Executive Officer and Chief Financial Officer, as appropriate, to allow timely decisions regarding required disclosure. In designing and evaluating the disclosure controls and procedures, management recognized that any controls and procedures, no matter how well designed and operated, can provide only reasonable and not absolute assurance of achieving the desired control objectives. In reaching a reasonable level of assurance, management necessarily was required to apply its judgment in evaluating the cost-benefit relationship of possible controls and procedures. In addition, the design of any system of controls also is based in part upon certain assumptions about the likelihood of future events, and there can be no assurance that any design will succeed in achieving its stated goals under all potential future conditions. Over time, controls may become inadequate because of changes in conditions, or the degree of compliance with policies or procedures may deteriorate. Because of the inherent limitations in a cost-effective control system, misstatements due to error or fraud may occur and not be detected.

As of December 31, 2020, we carried out an evaluation, under the supervision and with the participation of our management, including our Chief Executive Officer and Chief Financial Officer, of the effectiveness of the design and operation of our disclosure controls and procedures, as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended. Based on this evaluation, our Chief Executive Officer and Chief Financial Officer concluded that our disclosure controls and procedures were effective at the reasonable assurance level as of December 31, 2020.

Management's Report on Internal Control over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting as such term as defined in Exchange Act Rule 13a-15(f). Internal control over financial reporting is a process designed under the supervision and with the participation of our management, including our principal executive officer and principal financial officer, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with accounting principles generally accepted in the United States of America.

As of December 31, 2020, our management assessed the effectiveness of our internal control over financial reporting using the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission in *Internal Control-Integrated Framework (2013 Framework).* Based on this assessment, our management concluded that, as of December 31, 2020, our internal control over financial reporting was effective based on those criteria.

Changes in Internal Control over Financial Reporting

There were no changes in our internal control over financial reporting that occurred during the quarter ended December 31, 2020 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Item 9B. Other Information.

None.

PART III

Item 10. Directors, Executive Officers and Corporate Governance.

Except as set forth below, the information required by this item contained in our definitive proxy statement (the Proxy Statement), to be filed with the SEC in connection with the Annual Meeting of Stockholders within 120 days after the conclusion of our fiscal year ended December 31, 2020 and is incorporated in this Annual Report on Form10-K by reference.

We have adopted a Code of Business Conduct and Ethics that applies to all officers, directors and employees, including our principal executive officer, principal financial officer, principal accounting officer or controller, or persons performing similar functions. The Code of Business Conduct and Ethics is available on our website at *www.equilliumbio.com*. The information on our website is not incorporated by reference into this Annual Report on Form 10-K. If we make any substantive amendments to the Code of Business Conduct and Ethics or grants any waiver from a provision of the code to any executive officer or director, we will promptly disclose the nature of the amendment or waiver on our website or in a current report on Form 8-K.

Item 11. Executive Compensation.

The information required by this item is contained in the Proxy Statement and is incorporated in this Annual Report on Form 10-K by reference.

Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters.

The information required by this item is contained in the Proxy Statement and is incorporated in this Annual Report on Form 10-K by reference.

Item 13. Certain Relationships and Related Transactions, and Director Independence.

The information required by this item is contained in the Proxy Statement and is incorporated in this Annual Report on Form 10-K by reference.

Item 14. Principal Accounting Fees and Services.

The information required by this item is contained in the Proxy Statement and is incorporated in this Annual Report on Form 10-K by reference.

PART IV

Item 15. Exhibits, Financial Statement Schedules.

(a)(1) Consolidated Financial statements:

The Consolidated Financial Statements of Equillium, Inc. and Report of Independent Registered Public Accounting Firm are included after the Signatures page of this Annual Report on Form 10-K beginning on page F-1.

(a)(2) Financial Statement Schedules:

These schedules have been omitted because the required information is included in the financial statements or notes thereto or because they are not applicable or not required.

(a)(3) Exhibits

Exhibit Index

Exhibit Number	Description
3.1	Amended and Restated Certificate of Incorporation of the Registrant, incorporated by reference to Exhibit 3.1 of the Registrant's Current Report on Form 8-K filed on October 16, 2018.
3.2	Amended and Restated Bylaws of the Registrant, incorporated by reference to Exhibit 3.2 of the Registrant's Current Report on Form 8-K filed October 16, 2018.
4.1	Form of Common Stock Certificate of the Registrant, incorporated by reference to Exhibit 4.1 of the Registrant's Registration Statement on Form S-1 (File No. 333-227387), as amended, originally filed with the Securities and Exchange Commission on September 17, 2018.
4.2	Warrant to Purchase Common Stock, dated September 30, 2019, issued to Oxford Valley Finance LLC, incorporated by reference to Exhibit 4.2 of the Registrant's Quarterly Report on Form 10-Q, filed with the Securities and Exchange Commission on November 12, 2019.
4.3	Warrant to Purchase Common Stock, dated September 30, 2019, issued to Silicon Valley Bank, incorporated by reference to Exhibit 4.3 of the Registrant's Quarterly Report on Form 10-Q, filed with the Securities and Exchange Commission on November 12, 2019.
4.4	Description of Common Stock, incorporated by reference to Exhibit 4.4 of the Registrant's Annual Report on Form 10-K, filed with the Securities and Exchange Commission on March 26, 2020.
4.5	Form of Warrant, issued February 5, 2021, incorporated by reference to Exhibit 4.1 of the Registrant's Current Report on Form 8-K, filed with the Securities and Exchange Commission on February 4, 2021.
10.1+	Form of Indemnity Agreement by and between the Registrant and its directors and officers, incorporated by reference to Exhibit 10.1 of the Registrant's Registration Statement on Form S-1 (File No. 333-227387), as amended, originally filed with the Securities and Exchange Commission on September 17, 2018.
10.2+	Equillium, Inc. 2017 Equity Incentive Plan and Forms of Option Grant Notice, Option Agreement and Notice of Exercise thereunder, incorporated by reference to Exhibit 10.2 of the Registrant's Registration Statement on Form S-1 (File No. 333-227387), as amended, originally filed with the Securities and Exchange Commission on September 17, 2018.
10.3+	Equillium 2018 Equity Incentive Plan and Forms of Stock Option Grant Notice, Option Agreement and Notice of Exercise thereunder, incorporated by reference to Exhibit 99.2 of the Registrant's Registration Statement on Form S-8 (File No. 333-227859) filed with the Securities and Exchange Commission on October 16, 2018.
10.4+	Equillium, Inc. 2018 Employee Stock Purchase Plan, incorporated by reference to Exhibit 99.3 of the Registrant's Registration Statement on Form S-8 (File No. 333-227859) filed with the Securities and Exchange Commission on October 16, 2018.
10.5+	Equillium, Inc. Non-Employee Director Compensation Policy, as amended, incorporated by reference to Exhibit 10.1 of the Registrant's Quarterly Report on Form 10-Q, filed with the Securities and Exchange Commission on August 12, 2020.

10.6†	Collaboration and License Agreement, dated May 22, 2017, by and between the Registrant and Biocon SA (which was subsequently assigned to Biocon Limited effective March 2018), incorporated by reference to Exhibit 10.6 of the Registrant's Registration Statement on Form S-1 (File No. 333-227387), as amended, originally filed with the Securities and Exchange Commission on September 17, 2018.
10.7†	Clinical Supply Agreement, dated May 22, 2017, by and between the Registrant and Biocon SA (which was subsequently assigned to Biocon Limited effective March 2018), incorporated by reference to Exhibit 10.7 of the Registrant's Registration Statement on Form S-1 (File No. 333-227387), as amended, originally filed with the Securities and Exchange Commission on September 17, 2018.
10.8	Standard Office Lease, effective as of February 1, 2018, by and between the Registrant and La Jolla Shores Plaza, LLC, incorporated by reference to Exhibit 10.8 of the Registrant's Registration Statement on Form S-1 (File No. 333-227387), as amended, originally filed with the Securities and Exchange Commission on September 17, 2018.
10.9+	Offer Letter, dated June 1, 2018, by and between the Registrant and Daniel M. Bradbury, incorporated by reference to Exhibit 10.9 of the Registrant's Registration Statement on Form S-1 (File No. 333-227387), as amended, originally filed with the Securities and Exchange Commission on September 17, 2018.
10.10+	Offer Letter, dated March 19, 2018, by and between the Registrant and Jason A. Keyes, incorporated by reference to Exhibit 10.10 of the Registrant's Registration Statement on Form S-1 (File No. 333-227387), as amended, originally filed with the Securities and Exchange Commission on September 17, 2018.
10.11+	Offer Letter, dated June 1, 2018, by and between the Registrant and Bruce D. Steel, incorporated by reference to Exhibit 10.11 of the Registrant's Registration Statement on Form S-1 (File No. 333-227387), as amended, originally filed with the Securities and Exchange Commission on September 17, 2018.
10.12+	Amended and Restated Offer Letter, dated June 7, 2018, by and between the Registrant and Stephen Connelly, Ph.D., incorporated by reference to Exhibit 10.12 of the Registrant's Registration Statement on Form S-1 (File No. 333-227387), as amended, originally filed with the Securities and Exchange Commission on September 17, 2018.
10.13	First Amendment to Collaboration and License Agreement, effective as of September 28, 2018, by and between the Registrant and Biocon Limited, incorporated by reference to Exhibit 10.14 of the Registrant's Registration Statement on Form S-1 (File No. 333-227387), as amended, originally filed with the Securities and Exchange Commission on October 2, 2018.
10.14	Second Amendment to Collaboration and License Agreement dated April 22, 2019, by and between the Registrant and Biocon Limited, incorporated by reference to Exhibit 10.15 of the Registrant's Annual Report on Form 10-K, filed with the Securities and Exchange Commission on March 26, 2020.
10.15	Loan and Security Agreement, effective as of September 30, 2019, by and among the Registrant, Oxford Finance LLC and Silicon Valley Bank, incorporated by reference to Exhibit 10.1 of the Registrant's Quarterly Report on Form 10-Q filed with the Securities and Exchange Commission on November 12, 2019.
10.16	Open Market Sales Agreement, dated November 13, 2019, by and between the Registrant and Jefferies LLC, incorporated by reference to Exhibit 1.2 of the Registrant's Registration Statement on Form S-3 (File No. 333-234683), filed with the Securities and Exchange Commission on November 13, 2019.
10.17††	Third Amendment to Collaboration and License Agreement, dated December 10, 2019, by and between the Registrant and Biocon Limited, incorporated by reference to Exhibit 10.18 of the Registrant's Annual Report on Form 10-K, filed with the Securities and Exchange Commission on March 26, 2020.
10.18+	Offer Letter, dated January 19, 2018, by and between the Registrant and Christine Zedelmayer, incorporated by reference to Exhibit 10.19 of the Registrant's Annual Report on Form 10-K filed with the Securities and Exchange Commission on March 26, 2020.
10.19+	First Amendment to Offer Letter, effective as of January 1, 2020, by and between the Registrant and Daniel M. Bradbury, incorporated by reference to Exhibit 10.20 of the Registrant's Annual Report on Form 10-K, filed with the Securities and Exchange Commission on March 26, 2020.
10.20+	First Amendment to Offer Letter, effective as of January 1, 2020, by and between the Registrant and Krishna Polu, incorporated by reference to Exhibit 10.21 of the Registrant's Annual Report on Form 10-K, filed with the Securities and Exchange Commission on March 26, 2020.
10.21+	First Amendment to Offer Letter, effective as of January 1, 2020, by and between the Registrant and Bruce D. Steel, incorporated by reference to Exhibit 10.22 of the Registrant's Annual Report on Form 10-K, filed with the Securities and Exchange Commission on March 26, 2020.

10.22+	First Amendment to Offer Letter, effective as of January 1, 2020, by and between the Registrant and Christine Zedelmayer, incorporated by reference to Exhibit 10.23 of the Registrant's Annual Report on Form 10-K, filed with the Securities and Exchange Commission on March 26, 2020.
10.23	Purchase Agreement, dated March 27, 2020, by and between the Registrant and Lincoln Park Capital Fund, LLC, incorporated by reference to Exhibit 10.1 of the Registrant's Current Report on Form 8-K filed with the Securities and Exchange Commission on March 30, 2020.
10.24	Open Market Sale Agreement, dated as of July 14, 2020, by and between the Registrant and Jefferies LLC, incorporated by reference to Exhibit 1.1 of the Registrant's Current Report on Form 8-K, filed with the Securities and Exchange Commission on July 14, 2020.
10.25	Second Amendment to Offer Letter, effective as of September 28, 2020, by and between the Registrant and Krishna Polu, incorporated by reference to Exhibit 1.1 of the Registrant's Current Report on Form 8-K filed on September 28, 2020.
10.26+	Offer Letter, dated December 15, 2020, by and between the Registrant and Dolca Thomas, M.D., incorporated by reference to Exhibit 10.1 of the Registrant's Current Report on Form 8-K, filed with the Securities and Exchange Commission on December 21, 2020.
10.27	Purchase Agreement between the Company and the Purchasers, dated February 3, 2021, incorporated by reference to Exhibit 10.1 of the Registrant's Current Report on Form 8-K, filed with the Securities and Exchange Commission on February 4, 2021.
10.28*+	Amended and Restated Offer Letter, effective January 26, 2021, by and between the Registrant and Joel Rothman.
10.29*+	Equillium, Inc. Non-Employee Director Compensation Policy, as amended.
21.1	Subsidiaries of Equillium, Inc., incorporated by reference to Exhibit 21.1 of the Registrant's Annual Report on Form 10-K, filed with the Securities and Exchange Commission on March 26, 2020.
23.1*	Consent of Independent Registered Public Accounting Firm.
24.1*	Power of Attorney. Reference is made to the signature page hereto.
31.1*	Certification of Principal Executive Officer pursuant to Rules 13a-14(a) and 15d-14(a) of the Securities Exchange Act, as amended.
31.2*	Certification of Principal Financial Officer pursuant to Rules 13a-14(a) and 15d-14(a) of the Securities Exchange Act, as amended.
32.1**	Certification of Principal Executive Officer and Principal Financial Officer pursuant to Rules 13a-14(b) or 15d-14(b) of the Securities Exchange Act, as amended, and 18 U.S.C. Section 1350.
101.INS*	XBRL Instance Document
101.SCH*	XBRL Taxonomy Extension Schema Document
101.CAL*	XBRL Taxonomy Extension Calculation Linkbase Document
101.DEF*	XBRL Taxonomy Extension Definition Linkbase Document
101.LAB*	XBRL Taxonomy Extension Label Linkbase Document
101.PRE*	XBRL Taxonomy Extension Label Linkbase Document

* Filed herewith.

** 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.

\+ Indicates management contract or compensatory plan.

† Confidential treatment has been granted with respect to certain portions of this exhibit. Omitted portions have been filed separately with the Securities and Exchange Commission.

†† Certain portions of this exhibit (indicated by "[***]") have been omitted as the Registrant has determined (i) the omitted information is not material and (ii) the omitted information would likely cause harm to the Registrant if publicly disclosed.

Item 16. Form 10-K Summary.

None.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, as amended, the registrant has duly caused this annual report on Form 10-K to be signed on its behalf by the undersigned, thereunto duly authorized**.**

EQUILLIUM, INC.

Date: March 24, 2021

By: /s/ Bruce D. Steel

Bruce D. Steel
President and Chief Executive Officer
(Principal Executive Officer)

POWER OF ATTORNEY

KNOW ALL BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Bruce D. Steel and Jason A. Keyes, and each of them, as his or her true and lawful attorneys-in-fact and agents, each with the full power of substitution, for him or her and in his or her name, place or stead, in any and all capacities, to sign any and all amendments to this Annual Report on Form 10-K and to file the same, with 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 requisite and necessary to be done in and about the premises, as fully to all intents and purposes as he or she might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact and agents, or their substitute or substitutes, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Exchange Act of 1934, as amended, this report has been signed by the following persons in the capacities and on the dates indicated.

SIGNATURE	TITLE	DATE
/s/ Bruce D. Steel Bruce D. Steel	President and Chief Executive Officer *(Principal Executive Officer)*	March 24, 2021
/s/ Jason A. Keyes Jason A. Keyes	Chief Financial Officer *(Principal Financial and Accounting Officer)*	March 24, 2021
/s/ Daniel M. Bradbury Daniel M. Bradbury	Chairman of the Board of Directors	March 24, 2021
/s/ Stephen Connelly, Ph.D. Stephen Connelly, Ph.D.	Member of the Board of Directors	March 24, 2021
/s/ Martha J. Demski Martha J. Demski	Member of the Board of Directors	March 24, 2021
/s/ Bala S. Manian, Ph.D. Bala S. Manian, Ph.D.	Member of the Board of Directors	March 24, 2021
/s/ Charles McDermott Charles McDermott	Member of the Board of Directors	March 24, 2021
/s/ Mark Pruzanski, M.D. Mark Pruzanski, M.D.	Member of the Board of Directors	March 24, 2021
/s/ Y. Katherine Xu, M.D. Y. Katherine Xu, M.D.	Member of the Board of Directors	March 24, 2021

INDEX TO CONSOLIDATED FINANCIAL STATEMENTS
EQUILLIUM, INC.

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Stockholders and Board of Directors

Equillium, Inc.:

Opinion on the Consolidated Financial Statements

We have audited the accompanying consolidated balance sheets of Equillium, Inc. and its subsidiary (the Company) as of December 31, 2020 and 2019, the related consolidated statements of operations and comprehensive loss, stockholders' equity, and cash flows for the years then ended, and the related notes (collectively, the consolidated financial statements). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2020 and 2019, and the results of its operations and its cash flows for each of the years then ended, in conformity with U.S. generally accepted accounting principles.

Basis for Opinion

These consolidated financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these consolidated 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 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 financial statements are free of material misstatement, whether due to error or fraud. The Company is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. As part of our audits, we are required to obtain an understanding of internal control over financial reporting but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control over financial reporting. Accordingly, we express no such opinion.

Our audits included performing procedures to assess the risks of material misstatement of the consolidated 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 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 financial statements. We believe that our audits provide a reasonable basis for our opinion.

/s/ KPMG LLP

We have served as the Company's auditor since 2018.

San Diego, California
March 24, 2021

Equillium, Inc.
Consolidated Balance Sheets
(In thousands, except share and par value data)

	December 31,	
	2020	2019
Assets		
Current assets:		
Cash and cash equivalents	$ 23,982	$ 13,219
Short-term investments	58,181	39,924
Prepaid expenses and other current assets	3,011	2,288
Total current assets	85,174	55,431
Property and equipment, net	239	93
Other assets	15	15
Total assets	$ 85,428	$ 55,539
Liabilities and stockholders' equity		
Current liabilities:		
Accounts payable	$ 2,766	$ 1,873
Accrued expenses	2,813	2,010
Current portion of long-term notes payable	1,666	-
Total current liabilities	7,245	3,883
Long-term notes payable	8,275	9,681
Other non-current liabilities	54	127
Total liabilities	15,574	13,691
Commitments and contingencies		
Stockholders' equity:		
Common stock, $0.0001 par value; 200,000,000 shares authorized as of December 31, 2020 and 2019; 24,753,102 and 17,425,654 shares issued and outstanding as of December 31, 2020 and 2019, respectively	2	1
Additional paid-in capital	141,074	82,938
Accumulated other comprehensive (loss) income	(297)	21
Accumulated deficit	(70,925)	(41,112)
Total stockholders' equity	69,854	41,848
Total liabilities and stockholders' equity	$ 85,428	$ 55,539

See accompanying notes.

Equillium, Inc.
Consolidated Statements of Operations and Comprehensive Loss
(In thousands, except share and per share data)

	Year Ended December 31, 2020	Year Ended December 31, 2019
Operating expenses:		
Research and development	$ 19,384	$ 17,640
General and administrative	10,164	9,087
Total operating expenses	29,548	26,727
Loss from operations	(29,548)	(26,727)
Other (expense) income, net:		
Interest expense	(1,099)	(279)
Interest income	476	1,391
Other income, net	358	15
Total other (expense) income, net	(265)	1,127
Net loss	$ (29,813)	$ (25,600)
Other comprehensive (loss) income, net:		
Unrealized (loss) gain on available-for-sale securities, net	(41)	44
Foreign currency translation loss	(277)	(28)
Total other comprehensive (loss) income, net	(318)	16
Comprehensive loss	$ (30,131)	$ (25,584)
Net loss per share, basic and diluted	$ (1.46)	$ (1.47)
Weighted-average number of common shares outstanding, basic and diluted	20,355,534	17,378,096

See accompanying notes.

Equillium, Inc.
Consolidated Statements of Stockholders' Equity
(In thousands, except share data)

	Common Stock		Additional Paid-in Capital	Accumulated Other Comprehensive (Loss) Income	Accumulated Deficit	Total Stockholders' Equity
	Shares	Amount				
Balance at December 31, 2018	17,376,236	$ 1	$ 80,441	$ 5	$ (15,512)	$ 64,935
Issuance of common stock under ATM, net of issuance costs	18,250	-	(206)	-	-	(206)
Issuance of common stock pursuant to employee stock purchase plan	13,321	-	42	-	-	42
Vesting of restricted stock liability	-	-	74	-	-	74
Issuance of common stock warrants	-	-	266	-	-	266
Exercise of stock options	17,847	-	69	-		69
Stock-based compensation expense	-	-	2,252	-	-	2,252
Comprehensive income	-	-	-	16	-	16
Net loss	-	-	-	-	(25,600)	(25,600)
Balance at December 31, 2019	17,425,654	$ 1	$ 82,938	$ 21	$ (41,112)	$ 41,848
Issuance of common stock from follow-on offering, net of issuance costs	5,461,169	1	35,716	-	-	35,717
Issuance of common stock under ATM, net of issuance costs	1,714,174	-	18,115	-	-	18,115
Issuance of common stock	83,662	-	252	-	-	252
Issuance of common stock under employee stock purchase plan	65,443	-	156	-	-	156
Exercise of stock options	3,000	-	7	-	-	7
Vesting of restricted stock liability	-	-	73	-	-	73
Stock-based compensation expense	-	-	3,817	-	-	3,817
Comprehensive loss	-	-	-	(318)	-	(318)
Net loss	-	-	-	-	(29,813)	(29,813)
Balance at December 31, 2020	24,753,102	$ 2	$ 141,074	$ (297)	$ (70,925)	$ 69,854

See accompanying notes.

Equillium, Inc.
Consolidated Statements of Cash Flows
(In thousands)

	Year Ended December 31, 2020	Year Ended December 31, 2019
Operating activities:		
Net loss	$ (29,813)	$ (25,600)
Adjustments to reconcile net loss to cash used in operating activities:		
Depreciation and amortization	45	23
Stock-based compensation	3,817	2,252
Net unrealized gain on foreign currency transactions	(360)	(20)
Non-cash consulting expense	81	-
Amortization of term loan discount and issuance costs	260	65
Realized gain on investments	(13)	-
Amortization/accretion of investments, net	104	(382)
Changes in operating assets and liabilities:		
Prepaid expenses and other current assets	(491)	(1,115)
Accounts payable	894	775
Accrued expenses	852	1,053
Net cash used in operating activities	(24,624)	(22,949)
Investing activities:		
Purchases of property and equipment	(202)	(74)
Purchases of short-term investments	(55,510)	(54,619)
Maturities of short-term investments	37,120	52,527
Net cash used in investing activities	(18,592)	(2,166)
Financing activities:		
Proceeds from issuance of common stock from follow-on offering, net of issuance costs	35,717	-
Proceeds from issuance of common stock under ATM facilities, net of issuance costs	18,065	(156)
Proceeds from issuance of notes payable, net of issuance costs	-	9,881
Proceeds from ESPP purchases	156	42
Proceeds from exercise of stock options	7	69
Net cash provided by financing activities	53,945	9,836
Effect of exchange rate changes on cash and cash equivalents	34	(10)
Net increase (decrease) in cash and cash equivalents	10,763	(15,289)
Cash and cash equivalents at beginning of period	13,219	28,508
Cash and cash equivalents at end of period	$ 23,982	$ 13,219
Supplemental cash flow information:		
Cash paid for interest	$ 839	$ 142
Issuance of commitment shares to Lincoln Park pursuant to agreement	$ 171	$ -
Fair value of common stock warrants in connection with issuance of notes payable	$ -	$ 266
ATM issuance costs in accrued expenses	$ -	$ 50
Amounts included in accounts payable for purchases of property and equipment	$ -	$ 11

See accompanying notes.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

1. Organization and Accounting Pronouncements

Description of Business

Equillium, Inc. (the Company) was incorporated in the state of Delaware on March 16, 2017. The Company is a clinical-stage biotechnology company leveraging deep understanding of immunology to develop novel products to treat severe autoimmune and inflammatory disorders with high unmet medical need.

From inception through December 31, 2020, the Company has devoted substantially all of its efforts to organizing and staffing the Company, business planning, raising capital, in-licensing rights to itolizumab (EQ001), conducting preclinical research, filing three initial Investigational New Drug applications (INDs), conducting clinical development of the Company's initial product candidate, itolizumab (EQ001), conducting business development activities, and the general and administrative activities associated with operating as a public company. In addition, the Company has a limited operating history, has not generated revenues from its principal operations, and the sales and income potential of its business is unproven.

Liquidity and Business Risks

As of December 31, 2020, the Company had $82.2 million in cash, cash equivalents and short-term investments. The Company has incurred significant operating losses and negative cash flows from operations. The Company expects to use its cash, cash equivalents, and short-term investments to fund research and development of itolizumab (EQ001) and for working capital and other general corporate purposes. The Company does not expect to generate any revenues from product sales unless and until the Company successfully completes development and obtains regulatory approval of itolizumab (EQ001) or any future product candidate, which is unlikely to happen within the next 12 months, if ever. Accordingly, until such time as the Company can generate significant revenue from sales of its product candidates, if ever, the Company expects to finance its cash needs through a combination of equity offerings, debt financings, and collaboration and license agreements. However, the Company may not be able to secure additional financing or enter into such other arrangements in a timely manner or on favorable terms, if at all. As a result of the COVID-19 pandemic and actions taken to slow its spread, the global credit and financial markets have experienced extreme volatility, including diminished liquidity and credit availability, declines in consumer confidence, declines in economic growth, increases in unemployment rates and uncertainty about economic stability. There can be no assurance that further deterioration in credit and financial markets and confidence in economic conditions will not occur. If equity and credit markets deteriorate, it may make any necessary debt or equity financing more difficult to obtain, more costly and/or more dilutive. The Company's failure to raise capital or enter into such other arrangements when needed would have a negative impact on the Company's financial condition and could force the Company to delay, reduce or terminate its research and development programs or other operations, or grant rights to develop and market product candidates that the Company would otherwise prefer to develop and market itself. Management believes that the Company's cash, cash equivalents and short-term investments as of December 31, 2020 will be sufficient to fund operations for at least the next 12 months from the date this Annual Report on Form 10-K is filed with the Securities and Exchange Commission (SEC).

The COVID-19 outbreak in the United States and the rest of the world has caused disruptions to the Company's business, which may delay results of the Company's clinical trials and adversely impact the Company's business. The Company cannot predict how legal and regulatory responses to concerns about COVID-19 or other major public health issues will impact the Company's business, nor can it predict potential adverse impacts related to the availability of capital to fund the Company's operations. Additionally, the Company's workforce and outside consultants may also be affected, which could result in an adverse impact on the Company's ability to conduct business. Any of these factors, alone or in combination with others, could harm the Company's business, results of operations, financial condition or liquidity. However, the magnitude, timing, and duration of any such potential financial impacts cannot be reasonably estimated at this time.

Basis of Presentation

The accompanying consolidated financial statements have been prepared in accordance with U.S. generally accepted accounting principles (GAAP) and the rules and regulations of the SEC. 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 (ASU) promulgated by the Financial Accounting Standards Board (FASB).

Principles of Consolidation

In January 2019, the Company created a wholly-owned subsidiary in Australia with the Company serving as the sole shareholder through the subscription of shares. The accompanying consolidated financial statements include the accounts of the Company and its wholly-owned subsidiary. All intercompany transactions and balances have been eliminated in consolidation.

Foreign Currency Translation

The Company's wholly-owned subsidiary in Australia uses its local currency as its functional currency. Assets and liabilities are translated into U.S. dollars at quarter-end exchange rates and revenues and expenses are translated at average exchange rates during the year-to-date periods. Foreign currency translation adjustments for the reported periods are included in accumulated other comprehensive loss in the Company's consolidated statements of comprehensive loss, and the cumulative effect is included in the stockholders' equity section of the Company's consolidated balance sheets. Realized and unrealized gains and losses denominated in foreign currencies are recorded in operating expenses in the Company's consolidated statements of operations. For the years ended December 31, 2020 and 2019, net realized and unrealized gains totaled $0.3 million and $15,000, respectively.

Recent Accounting Pronouncements

In February 2016, the FASB issued ASU 2016-02, *Leases (Topic 842)*, which amends the FASB ASC 840 and creates Topic 842, Leases. The new topic supersedes Topic 840, Leases, and increases transparency and comparability among organizations by recognizing lease assets and lease liabilities on the balance sheet and requires disclosures of key information about leasing arrangements. For companies that are not emerging growth companies (EGCs), ASU 2016-02 is effective for fiscal years beginning after December 15, 2018. For EGCs, the ASU was to be effective for fiscal years beginning after December 15, 2019. However, in November 2019, the FASB issued ASU 2019-10, *Financial Instruments—Credit Losses (Topic 326)*, *Derivatives and Hedging (Topic 815)* and *Leases (Topic 842*), *Effective Dates (ASU 2019-10)*, which included a one-year deferral of the effective date of ASU 2016-02 for certain entities. As a result, the ASU is now effective for EGCs for fiscal years beginning after December 15, 2020, and interim periods within fiscal years beginning after December 15, 2021. The Company expects to adopt the new standard in the fourth quarter of 2021 using the modified retrospective method, under which the Company will apply Topic 842 to existing and new leases as of January 1, 2021, but prior periods will not be restated and will continue to be reported under Topic 840 guidance in effect during those periods. The Company anticipates that the adoption will not have a material impact on its consolidated statements of operations and consolidated comprehensive loss or its consolidated statements of cash flows but expects to recognize right-of-use assets and liabilities for lease obligations associated with its operating leases.

In June 2016, the FASB issued ASU No. 2016-13, *Measurement of Credit Losses on Financial Instruments*, which will require a reporting entity to use a new forward-looking impairment model for most financial assets that generally will result in the earlier recognition of allowances for losses. The ASU, along with related amendments, revised the measurement of credit losses for financial assets measured at amortized cost from an incurred loss to an expected loss methodology. The ASU affected receivables, debt securities, net investment in leases, and most other financial assets that represent a right to receive cash. The standard and other related subsequently issued ASUs will be effective for the Company for annual periods beginning after December 15, 2022, with early adoption permitted beginning in 2019. The Company is currently evaluating the impact that the adoption of the standard and other related subsequently issued ASUs will have on its consolidated financial statements and accompanying footnotes.

In December 2019, the FASB issued ASU No. 2019-12, *Income Taxes (Topic 740): Simplifying the Accounting for Income Taxes*. The amendments in this ASU simplify the accounting for income taxes by removing certain exceptions to the general principles in Topic 740. The amendments also improve consistent application of and simplify GAAP for other areas of Topic 740 by clarifying and amending existing guidance. The amendments in this ASU are effective for the Company on January 1, 2021. The Company is currently evaluating the impact that the adoption of ASU 2019-12 will have on its consolidated financial statements and accompanying footnotes.

Adopted Accounting Pronouncements

In August 2018, the FASB issued ASU 2018-13, *Fair Value Measurement (Topic 820) – Disclosure Framework – Changes to the Disclosure Requirements for Fair Value Measurement*, which is designed to improve the effectiveness of disclosures by removing, modifying and adding disclosures related to fair value measurements. ASU 2018-13 was effective for fiscal years beginning after December 15, 2019, including interim periods within those fiscal years. Early adoption was permitted. The Company adopted this ASU on January 1, 2020. The adoption of this standard did not have a material impact on the Company's consolidated financial statements.

2. Summary of Significant Accounting Policies

Use of Estimates

The preparation of the Company's consolidated financial statements requires the Company to make estimates and assumptions that impact the reported amounts of assets, liabilities and expenses and the disclosure of contingent assets and liabilities in the consolidated financial statements and accompanying notes. Significant estimates in the Company's consolidated financial statements relate to clinical trial accruals and the valuation of equity awards. Management evaluates its estimates on an ongoing basis. Although estimates are based on the Company's historical experience, knowledge of current events, and actions it may undertake in the future, actual results may ultimately materially differ from these estimates and assumptions.

Concentration of Credit Risk and Off-Balance Sheet Risk

Financial instruments which potentially subject the Company to significant concentration of credit risk consist of cash and cash equivalents and short-term investments. The Company maintains deposits in federally insured financial institutions in excess of federally insured limits. The Company has not experienced any losses in such accounts, and management believes that the Company is not exposed to significant credit risk due to the financial position of the depository institutions in which those deposits are held. The Company's investment policy includes guidelines for the quality of the related institutions and financial instruments and defines allowable investments that the Company may invest in, which the Company believes minimizes the exposure to concentration of credit risk.

Comprehensive Loss

The Company is required to report all components of comprehensive loss, including net loss, in the consolidated financial statements in the period in which they are recognized. Comprehensive loss is defined as the change in equity during a period from transactions and other events and circumstances from non-owner sources, including unrealized gains and losses on investments and foreign currency gains and losses. Other comprehensive (loss) income, net includes unrealized losses or gains on short-term investments as well as foreign currency translation losses or gains.

Cash and Cash Equivalents

Cash and cash equivalents include cash in readily available checking and savings accounts, and money market funds. The Company considers all highly liquid investments with an original maturity of three months or less from the date of purchase to be cash equivalents.

Short-Term Investments

Available-for-sale securities are carried at fair value, with the unrealized gains and losses reported in comprehensive loss. The amortized cost of available-for-sale debt securities is adjusted for amortization of premiums and accretion of discounts to maturity. Such amortization and accretion are included in interest income. Realized gains and losses and declines in value judged to be other-than-temporary, if any, on available-for-sale securities are included in other income or expense. The cost of securities sold is based on the specific identification method. Interest and dividends on securities classified as available-for-sale are included in interest income.

Prepaid Expenses and Other Current Assets

Prepaid expenses and other current assets primarily represent amounts related to director and officer insurance, preclinical research and clinical trial agreements, equity issuance costs and an estimated tax refund for the year ended December 31, 2020 from the Australian Tax Office for eligible research and development expenditures.

Property and Equipment

Property and equipment is stated at cost and depreciated using the straight-line method over the estimated useful lives of the assets (generally three to five years).

Impairment of Long-Lived Assets

Long-lived assets consist primarily of property and equipment. An impairment loss is recorded if and when events and circumstances indicate that assets might be impaired and the undiscounted cash flows estimated to be generated by those assets are less than the carrying amount of those assets. While the Company's current and historical operating losses and negative cash flows are indicators of impairment, management believes that future cash flows to be received support the carrying value of its long-lived assets and, accordingly, has not recognized any impairment losses since inception.

Accrued Research and Development Expense

The Company is required to estimate its expenses resulting from its obligations under contracts with vendors, consultants and contract research organizations, in connection with conducting research and development activities. The financial terms of these contracts are subject to negotiations, which vary from contract to contract and may result in payment flows that do not match the periods over which materials or services are provided under such contracts. The Company reflects research and development expenses in its consolidated financial statements by matching those expenses with the period in which services and efforts are expended. The Company accounts for these expenses according to the progress of the preclinical or clinical study as measured by the timing of various aspects of the study or related activities. The Company determines accrual estimates through review of the underlying contracts along with preparation of financial models taking into account discussions with research and other key personnel as to the progress of studies, or other services being conducted. During the course of a study, the Company adjusts its rate of expense recognition if actual results differ from its estimates. The Company classifies its estimates for accrued research and development expenses as accrued expenses on the accompanying consolidated balance sheet.

Australian Research and Development Tax Incentive

The Company is eligible under the Australian Research and Development Tax Incentive Program, or the Tax Incentive, to obtain a cash refund from the Australian Taxation Office for eligible research and development expenditures. To be eligible, the Company must have revenue of less than AUD $20.0 million during the reimbursable period and cannot be controlled by income tax exempt entities. The Tax Incentive is recognized as a reduction to research and development expense when there is reasonable assurance that the Tax Incentive will be received, the relevant expenditure has been incurred, and the amount can be reliably measured. The Company classifies its estimate for the Tax Incentive as prepaid expenses and other current assets on the accompanying consolidated balance sheet.

Research and Development

Research and development expenses include salaries and related overhead expenses, non-cash stock-based compensation expense, external research and development expenses incurred under arrangements with third parties, costs of services performed by consultants and contract research organizations, and regulatory costs including those related to preparing and filing INDs with the FDA. Research and development costs are expensed as incurred.

Patent Costs

The Company expenses all costs as incurred in connection with patent applications (including direct application fees, and the legal and consulting expenses related to making such applications) and such costs are included in general and administrative expenses in the consolidated statement of operations.

Stock-based Compensation

The Company measures employee and nonemployee stock-based awards, including stock options and purchase rights, at grant-date fair value and records compensation expense on a straight-line basis over the vesting period of the award. The Company uses the Black-Scholes option pricing model to value its stock option awards. Estimating the fair value of stock option awards requires management to apply judgment and make estimates of certain assumptions, including the volatility of the Company's common stock, the expected term of the Company's stock options, the expected dividend yield and the fair value of the Company's common stock on the measurement date. As a result, if factors change and management uses different assumptions, stock-based compensation expense could be materially different for future awards.

Income Taxes

The Company accounts for income taxes under the asset and liability method, which requires the recognition of deferred tax assets and liabilities for the expected future tax consequences of events that have been included in the consolidated financial statements. Under this method, deferred tax assets and liabilities are determined on the basis of the differences between the consolidated financial statements and tax basis of assets and liabilities using enacted tax rates in effect for the year in which the differences are expected to reverse. The effect of a change in tax rates on deferred tax assets and liabilities is recognized in income in the period that includes the enactment date.

The Company recognizes deferred tax assets to the extent that the Company believes these assets are more likely than not to be realized. In making such a determination, management considers all available positive and negative evidence, including future reversals of existing taxable temporary differences, projected future taxable income, tax-planning strategies, and results of recent operations. If management determines that the Company would be able to realize its deferred tax assets in the future in excess of their net recorded amount, management would make an adjustment to the deferred tax asset valuation allowance, which would reduce the provision for income taxes.

The Company records uncertain tax positions on the basis of a two-step process whereby (1) management determines whether it is more likely than not that the tax positions will be sustained on the basis of the technical merits of the position and (2) for those tax positions that meet the more- likely-than-not recognition threshold, management recognizes the largest amount of tax benefit that is more than 50 percent likely to be realized upon ultimate settlement with the related tax authority. The Company recognizes interest and penalties related to unrecognized tax benefits within income tax expense. Any accrued interest and penalties are included within the related tax liability.

Net Loss per Share

Basic net loss per share is calculated by dividing the net loss by the weighted-average number of common shares outstanding for the period. Diluted net loss per share is computed by dividing the net loss by the weighted average number of common shares and common share equivalents outstanding for the period. Common stock equivalents are only included when their effect is dilutive. The Company's potentially dilutive securities include outstanding options under the Company's equity incentive plan and outstanding warrants to purchase common stock, each of which have been excluded from the computation of diluted net loss per share as they would be anti-dilutive to the net loss per share. For all periods presented, there is no difference in the number of shares used to calculate basic and diluted shares outstanding due to the Company's net loss position.

Potentially dilutive securities not included in the calculation of diluted net loss per share attributable to common stockholders because to do so would be anti-dilutive are as follows (in common stock equivalent shares):

	Year Ended December 31, 2020	Year Ended December 31, 2019
Common stock options	2,463,317	1,821,093
Common stock warrants	80,428	80,428
Total	2,543,745	1,901,521

3. Fair Value of Financial Instruments

The accounting guidance defines fair value, establishes a consistent framework for measuring fair value and expands disclosure for each major asset and liability category measured at fair value on either a recurring or nonrecurring basis. Fair value is defined as an exit price, representing the amount that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants. As such, fair value is a market-based measurement that should be determined based on assumptions that market participants would use in pricing an asset or liability. As a basis for considering such assumptions, the accounting guidance establishes a three-tier fair value hierarchy, which prioritizes the inputs used in measuring fair value as follows:

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 for similar assets and liabilities in active markets, 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 liability.

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).

Financial assets measured at fair value on a recurring basis consist of the Company's cash equivalents and short-term investments. Cash equivalents consisted of money market funds and short-term investments consisted of U.S. treasury securities, agency securities and certificates of deposit. The Company obtains pricing information from its investment manager and generally determines the fair value of investment securities using standard observable inputs, including reported trades, broker/dealer quotes, and bid and/or offers.

The following tables summarize the Company's assets that require fair value measurements on a recurring basis and their respective input levels based on the fair value hierarchy (in thousands):

	December 31, 2020	Fair Value Measurements Using: Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Short-term investments:				
U.S. treasury securities	$ 56,220	$ 56,220	$ -	$ -
Certificates of deposit	1,961	1,961	-	-
Total	$ 58,181	$ 58,181	$ -	$ -

	December 31, 2019	Fair Value Measurements Using: Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Short-term investments:				
U.S. treasury securities	$ 28,549	$ 28,549	$ -	$ -
Agency securities	5,994	-	5,994	-
Certificates of deposit	5,381	5,381	-	-
Total	$ 39,924	$ 33,930	$ 5,994	$ -

U.S. treasury securities and certificates of deposit are valued using Level 1 inputs. Level 1 securities are valued at unadjusted quoted prices in active markets that are observable at the measurement date for identical, unrestricted assets or liabilities. Fair values determined by Level 2 inputs, which utilize data points that are observable such as quoted prices, interest rates and yield curves, require the exercise of judgment and use of estimates, that if changed, could significantly affect the Company's financial position and results of operations. Investments in agency securities are valued using Level 2 inputs. Level 2 securities are initially valued at the transaction price and subsequently valued and reported utilizing inputs other than quoted prices that are observable either directly or indirectly, such as quotes from third-party pricing vendors.

The carrying amounts of the Company's financial instruments, including cash, prepaid and other current assets, accounts payable, and accrued liabilities, approximate fair value due to their short maturities. At December 31, 2020 and 2019, the carrying amount of the Company's notes payable of $9.9 million and $9.7 million, respectively, approximated their fair value as the terms of the notes are consistent with the market terms of transactions with similar profiles (Level 2 inputs). None of the Company's non-financial assets or liabilities are recorded at fair value on a non-recurring basis.

At December 31, 2020 and 2019, the Company had investments in money market funds of $17.4 million and $10.3 million, respectively, that were measured at fair value using the net asset value per share (or its equivalent) that have not been classified in the fair value hierarchy. The funds invest primarily in U.S. government securities.

The Company did not hold any Level 1, 2 or 3 financial liabilities that are recorded at fair value on a recurring basis as of December 31, 2020 or 2019.

4. Short-term Investments

The following table summarizes the Company's short-term investments (in thousands):

	Maturity (in years)	Amortized Cost	Unrealized Gains	Unrealized Losses	Estimated Fair Value
December 31, 2020					
U.S. treasury securities	1 or less	$ 56,218	$ 6	$ (4)	$ 56,220
Certificates of deposit	1 or less	1,955	6	-	1,961
Total		$ 58,173	$ 12	$ (4)	$ 58,181
December 31, 2019					
U.S. treasury securities	1 or less	$ 23,513	$ 6	$ (4)	$ 23,515
U.S. treasury securities	>1 and <5	5,035	-	(1)	5,034
Agency securities	1 or less	5,976	19	(1)	5,994
Certificates of deposit	1 or less	4,131	22	-	4,153
Certificates of deposit	>1 and <5	1,220	8	-	1,228
Total		$ 39,875	$ 55	$ (6)	$ 39,924

All of the Company's available-for-sale securities are available to the Company for use in its current operations. As a result, the Company categorizes all of these securities as current assets even though the stated maturity of some individual securities may be one year or more beyond the balance sheet date. All of the Company's securities have a maturity within two years of the balance sheet date.

There were no impairments considered other-than-temporary during the year ended December 31, 2020, as it is management's intention and ability to hold the securities until a recovery of the cost basis or recovery of fair value. Unrealized gains and losses are included in accumulated other comprehensive (loss) income.

5. Property and Equipment

Property and equipment consisted of the following (in thousands):

	December 31, 2020	December 31, 2019
Furniture & fixtures	$ 60	$ 60
Machinery & lab equipment	211	24
Computer equipment	42	38
Less accumulated depreciation and amortization	(74)	(29)
Property and equipment, net	$ 239	$ 93

Depreciation expense related to property and equipment was approximately $45,000 and $23,000 for the years ended December 31, 2020 and 2019, respectively. No material gains or losses on the disposal of property and equipment have been recorded for the years ended December 31, 2020 or 2019.

6. Accrued Expenses

Accrued expenses consisted of the following (in thousands):

	December 31, 2020	December 31, 2019
Accrued payroll and other employee benefits	$ 1,870	$ 1,215
Clinical studies	493	442
Other accruals	307	267
Preclinical studies	72	15
Accrued interest	71	71
Total accrued expenses	$ 2,813	$ 2,010

7. Collaboration and License Agreement

In May 2017, the Company entered into a collaboration and license agreement (which was amended in September 2018, April 2019 and December 2019), clinical supply agreement, investor rights agreement, and common stock purchase agreement (collectively License Agreements) with Biocon SA (subsequently assigned to Biocon Limited, or together, Biocon). Pursuant to the License Agreements, Biocon granted the Company an exclusive license to develop, make, have made, use, sell, have sold, offer for sale, import and otherwise exploit itolizumab and any pharmaceutical composition or preparation containing or comprising itolizumab that uses Biocon technology or Biocon know-how (collectively a Biocon Product) in the United States, Canada, Australia and New Zealand (collectively Company Territory). However, unless the Company achieves certain regulatory and development milestones within a specific time period, the licensed rights, other than development rights, are limited to the fields of orphan indications and the treatment of conditions related to asthma and lupus. The Company also has the right to sublicense through multiple tiers to third parties, provided such sublicenses comply with the terms of the License Agreements and the Company provides Biocon a copy of each sublicense agreement within 30 days of execution. If the Company grants a third party a sublicense of its rights to develop and commercialize Biocon Products in Australia or New Zealand, the Company will be required to pay Biocon a high double-digit percentage of any upfront payment the Company receives from such sublicensee for such sublicense, as well as a high double-digit percentage of any additional payments the Company receives from such sublicensee for such sublicense, including but not limited to royalty payments on net sales of Biocon Products by such sublicensee. Under the License Agreements, the Company granted back to Biocon a license to use its technology and know-how related to itolizumab and Biocon Products in certain countries outside of the Equillium Territory. Pursuant to the License Agreements, Biocon agreed to be the Company's exclusive supplier of itolizumab clinical drug product. Biocon will provide clinical drug product at no cost for up to three concurrent orphan indications until the Company's first U.S. regulatory approval and all other clinical drug product at Biocon's cost.

In consideration of the rights granted to the Company by Biocon, the Company issued Biocon a total of 2,316,134 shares of its common stock.

In addition, the Company is obligated to pay Biocon up to an aggregate of $30 million in regulatory milestone payments upon the achievement of certain regulatory approvals and up to an aggregate of $565 million in sales milestone payments upon the achievement of first commercial sale of product and specified levels of product sales. The Company is also required to pay royalties on tiers of aggregate annual net sales of Biocon Products by us, our affiliates and our sublicensees in the United States and Canada at percentages from the mid-single digits to sub-teen double-digits and on tiers of aggregate annual net sales of Biocon Products by us and our affiliates (but not our sublicensees) in Australia and New Zealand, in each case, subject to adjustments in certain circumstances. Biocon is also required to pay the Company royalties at comparable percentages for sales of itolizumab (EQ001) outside of the Company Territory if the approvals in such geographies included or referenced the Company's data including data from certain of the Company's clinical trials, subject to adjustments in certain circumstances. Under the License Agreements, net sales are calculated on a country-by-country basis and are subject to adjustments, including whether the Biocon Product is sold in the form of a combination product. As of December 31, 2020, the Company has not made or received payments in connection with the milestones or royalties within the agreement.

8. Notes Payable

On September 30, 2019 (the Effective Date), the Company entered into a Loan and Security Agreement (the Loan Agreement) with two lenders (the Lenders) whereby the Company can borrow up to $20.0 million in a series of term loans. Upon entering into the Loan Agreement, the Company borrowed $10.0 million from the Lenders (Term A Loan).

Under the terms of the Loan Agreement, the Company may, at its sole discretion, borrow from the Lenders (i) up to an additional $5.0 million (Term B Loan) upon the Company's achievement of positive topline data in either the Company's (a) Phase 1b aGVHD trial of itolizumab (EQ001) or (b) Phase 1b asthma trial of itolizumab (EQ001), supporting a formal decision to advance into Phase 2 development, and as confirmed by the Board of Directors (the Board) of the Company (the Term B Milestone) and (ii) up to an additional $5.0 million (Term C Loan and together with Term A Loan and Term B Loan, the Term Loans) upon the Company's achievement of positive topline data in both the Company's Phase 1b aGVHD trial of itolizumab (EQ001) and the Company's Phase 1b asthma trial of itolizumab (EQ001), supporting a formal decision to advance into Phase 2 development, and as confirmed by the Board (the Term C Milestone). The Company may draw the Term B Loan during the period commencing on the date of the occurrence of the Term B Milestone and ending on the earliest of (i) December 31, 2020, (ii) 60 days after achieving the Term B Milestone, and (iii) the occurrence of an event of default and may draw the Term C Loan during the period commencing on the date of the occurrence of the Term C Milestone and ending on the earliest of (i) December 31, 2020, (ii) 60 days after achieving the Term C Milestone, and (iii) the occurrence of an event of default. As of December 31, 2020, the Company did not achieve the Term B or Term C Milestone and is not eligible to receive the additional funding up to $10 million under the Loan Agreement.

All of the Term Loans mature on June 1, 2024 (the Maturity Date) and require interest-only payments through June 30, 2021, followed by 36 equal monthly payments of principal and interest; provided that if the Company draws the Term B Loan, the Term Loans will require interest-only payments through December 31, 2021, followed by 30 equal monthly payments of principal and interest. The Term Loans will bear interest at a floating per annum rate equal to the greater of (i) 8.25% and (ii) the sum of (a) the prime rate reported in The Wall Street Journal on the last business day of the month that immediately precedes the month in which the interest will accrue, plus (b) 3.00%.

On December 18, 2020, the Company entered into the First Amendment to the Loan Agreement (the Amendment) with the Lenders whereby if the Company achieves the Term B Milestone on or prior to June 30, 2021, the interest-only payments will be automatically extended to January 1, 2022. The Company has not yet achieved the Term B Milestone subsequent to December 31, 2020 and through the date of the filing of this Annual Report on Form 10-K.

The Company will be required to make a final payment of 4.50% of the original principal amount of the Term Loans drawn payable on the earlier of (i) the Maturity Date, (ii) the acceleration of any Term Loans, or (iii) the prepayment of the Term Loans (the Final Payment). The Company may prepay all, but not less than all, of the Term Loans upon 30 days' advance written notice to the lender, provided that the Company will be obligated to pay a prepayment fee equal to (i) 3.00% of the principal amount of the applicable Term Loan prepaid on or before the first anniversary of the applicable funding date, (ii) 2.00% of the principal amount of the applicable Term Loan prepaid between the first and second anniversary of the applicable funding date, and (iii) 1.00% of the principal amount of the applicable Term Loan prepaid thereafter, and prior to the Maturity Date (each, a Prepayment Fee).

In connection with entering into the Loan Agreement, the Company issued to the Lenders warrants exercisable for 80,428 shares of the Company's common stock (the Warrants). The Warrants are exercisable in whole or in part, immediately, and have a per share exercise price of $3.73, which is the closing price of the Company's common stock reported on the Nasdaq Global Market on the day prior to the Effective Date. The Warrants will terminate on the earlier of September 30, 2029 or the closing of certain merger or consolidation transactions. If the Company borrows under Term B Loan and/or Term C Loan, upon the funding of Term B Loan and/or Term C Loan, as applicable, the Company will issue to the Lenders additional warrants to purchase shares of the Company's common stock equal to 3.00% of each Term Loan amount divided by the lower of (i) the ten day average closing price of the Company's common stock reported on the Nasdaq Global Market prior to funding or (ii) the closing price of the Company's common stock reported on the Nasdaq Global Market on the day prior to funding. Such lower amount of (i) and (ii) above shall also be the exercise price per share for such warrants. The terms of such warrants would be substantially the same as those contained in the Warrants.

The Company recorded the Warrants as a debt discount, which is classified as a contra-liability against long-term notes payable on the consolidated balance sheet and is amortizing the balance over the life of the underlying debt. The offset to the contra-liability is recorded in additional paid in capital in the Company's consolidated balance sheet as the Warrants were determined to be equity classified. The Company determined the fair value of the Warrants at the date of issuance was $0.3 million using the Black-Scholes option pricing model based on significant unobservable inputs (Level 3) with an expected term of 10 years, volatility of 92.78%, risk free rate of 1.68% and expected dividend of 0%.

The costs incurred to issue the Term Loans of $0.1 million were deferred and are included in the discount to the carrying value of the Term Loans in the accompanying consolidated balance sheet. The deferred costs and the Final Payment fee are amortized to interest expense over the expected term of the Term Loans using the effective interest method with an effective interest rate of 10.97%.

The aggregate carrying amounts of the Term Loans are comprised of the following (in thousands):

	December 31, 2020	December 31, 2019
Principal	$ 10,000	$ 10,000
Add: accreted liability for final payment fee	176	35
Less: unamortized discount	(235)	(354)
Total	$ 9,941	$ 9,681

Upon the occurrence of certain events, including but not limited to the Company's failure to satisfy its payment obligations under the Loan Agreement, the breach of certain of its other covenants under the Loan Agreement, or the occurrence of a material adverse change, cross defaults to other indebtedness or material agreements, judgment defaults and defaults related to failure to maintain governmental approvals failure of which to maintain could result in a material adverse effect, the Company's lenders will have the right, among other remedies, to declare all principal and interest immediately due and payable, to exercise secured party remedies, to receive the Final Payment and, if the payment of principal and interest is due prior to the Maturity Date, to receive the applicable Prepayment Fee. At December 31, 2020, the Company was in compliance with the covenants contained in the Loan Agreement.

Future maturities of the Term Loans, including the Final Payment fee, as of December 31, 2020 were as follows (in thousands):

	December 31, 2020
Year ending December 31, 2021	$ 1,667
Year ending December 31, 2022	3,333
Year ending December 31, 2023	3,333
Year ending December 31, 2024	2,117
	10,450
Unaccreted balance for Final Payment fee on Term Loans	(274)
Unamortized discounts	(235)
	9,941
Less current portion	(1,666)
Noncurrent portion	$ 8,275

9. Stockholders' Equity

As of December 31, 2020, the Company's authorized capital stock consisted of 200,000,000 shares of common stock, par value $0.0001 per share, and 10,000,000 shares of preferred stock, par value $0.0001 per share.

The Company had 24,753,102 and 17,425,654 shares of common stock outstanding as of December 31, 2020 and 2019, respectively.

Follow-On Public Offering

In August 2020, the Company completed an underwritten public offering of 5,461,169 shares of common stock at $7.00 per share, which included 461,169 shares sold pursuant to the exercise of the underwriters' option to purchase additional shares. The Company received gross proceeds from this offering totaling $38.2 million. The proceeds, net of underwriting discounts and related issuance costs, were $35.7 million.

At-the-Market Offering Program

In November 2019, the Company entered into an Open Market Sales Agreement℠ with Jefferies LLC (Jefferies) under which the Company could offer and sell shares of its common stock from time to time, through an "at-the-market", or ATM, equity offering program under which Jefferies acted as sales agent (2019 ATM Facility). The Company set certain parameters for the sale of shares, which included but were not limited to the number of shares to be issued, the time period during which sales are requested to be made, and any minimum price below which sales may not be made. Jefferies was entitled to compensation for its services at a commission rate of 3.0% of the gross sales price per share of common stock sold plus reimbursement of certain expenses.

The maximum aggregate offering price of common stock that could be sold under the 2019 ATM Facility was $8.45 million. In December 2019, the Company sold an aggregate of 18,250 shares of its common stock under the 2019 ATM Facility resulting in net negative proceeds of $0.2 million, after deducting the facility's costs. During the year ended December 31, 2020, the Company sold an aggregate 925,489 shares of its common stock and received gross proceeds of $8.4 million under the 2019 ATM Facility. The Company paid commissions on the gross proceeds in the aggregate amount of approximately $0.3 million, during the year ended December 31, 2020, resulting in net proceeds of $8.1 million. As of December 31, 2020, the 2019 ATM Facility was fully utilized.

On July 14, 2020, the Company entered into a new ATM equity offering program (2020 ATM Facility) with Jefferies under which the Company may offer and sell shares of the Company's common stock having an aggregate price of up to $150 million, from time to time, through Jefferies acting as our sales agent. For the year ended December 31, 2020, the Company sold an aggregate of 788,685 shares of common stock under the 2020 ATM Facility and received gross proceeds of $10.4 million. The Company paid cash commissions on the gross proceeds, plus reimbursement expenses to Jefferies and other issuance costs in the aggregate amount of approximately $0.4 million, resulting in net proceeds of $10.0 million. Since December 31, 2020 and through the date of the filing of this Annual Report on Form 10-K, there have been no additional sales of the Company's stock under the 2020 ATM Facility.

Purchase Agreement

In March 2020, the Company entered into a purchase agreement (Purchase Agreement), with Lincoln Park Capital Fund, LLC (Lincoln Park), which provides that, upon the terms and subject to the conditions and limitations set forth therein, the Company

may sell to Lincoln Park up to $15.0 million of shares of its common stock from time to time over the 36-month term of the Purchase Agreement. Upon execution of the Purchase Agreement, the Company issued 65,374 shares of its common stock to Lincoln Park as commitment shares in accordance with the closing conditions contained within the Purchase Agreement. The commitment shares were valued using the closing price of the Company's common stock on the effective date of the Purchase Agreement resulting in a fair market value of approximately $0.2 million. The fair market value of the commitment shares as well as other issuance costs associated with the Purchase Agreement totaled $0.4 million. These issuance costs are classified as prepaid expenses and other current assets in the accompanying consolidated balance sheet. As shares of common stock are sold to Lincoln Park in accordance with the Purchase Agreement, the issuance costs, including the fair value of the commitment shares, will be reclassified to additional paid-in capital on the Company's consolidated balance sheet. There have been no sales of the Company's stock under this Purchase Agreement as of December 31, 2020 and through the date of the filing of this Annual Report on Form 10-K.

2018 Equity Incentive Plan

In October 2018, the Company adopted the 2018 Equity Incentive Plan (the 2018 Plan) which replaced the Company's legacy 2017 Equity Incentive Plan (the 2017 Plan). The 2018 Plan provides for the grant of incentive stock options, non-statutory stock options, stock appreciation rights, restricted stock awards, restricted stock unit awards, performance stock awards, performance cash awards and other forms of stock awards. As of December 31, 2020, the 2018 Plan had a maximum of 1,039,531 total shares available for issuance. The number of shares of common stock reserved for issuance under the 2018 Plan will automatically increase on January 1 of each calendar year through January 1, 2028, in an amount equal to 5.0% of the total number of shares of the Company's capital stock outstanding on the last day of the calendar month before the date of each automatic increase, or a lesser number of shares determined by the Board.

Options granted under the 2018 Plan are exercisable at various dates as determined upon grant and will expire no more than ten years from their date of grant. The exercise price of each option shall be determined by the Board based on the estimated fair value of the Company's stock on the date of the option grant. The exercise price shall not be less than 100% of the fair market value of the Company's common stock at the time the option is granted. Most option grants generally vest 25% on the first anniversary of the original vesting commencement date, with the balance vesting monthly over the remaining three years.

Repricing of Outstanding Options

On April 22, 2020, the Board approved a repricing of outstanding options to purchase 1,475,093 shares of the Company's common stock held by employees of the Company, including executive officers (but excluding any employees who serve on the Board) that had exercise prices in excess of the closing stock price on April 22, 2020 and were granted under the Company's equity incentive plans. As a result of the repricing, the exercise price of such options was lowered to $2.45 per share, the closing price of the Company's common stock on April 22, 2020. The vesting schedule and term of these options remained unchanged.

The Board effectuated the repricing to realign the value of such options with their intended purpose, which is to retain and motivate the holders of such options to continue to work in the best interests of the Company and its stockholders. Prior to the repricing, many of the options had exercise prices well above the market prices of the Company's common stock at that time, including prior to the market volatility that had generally been associated with the onset of the COVID-19 pandemic.

The effect of the repricing generated a total incremental cost of approximately $0.4 million, of which approximately $0.2 million was recognized as stock-based compensation expense in the year ended December 31, 2020, with the remainder to be expensed over the remaining vesting periods.

Stock Options

The following summarizes stock option activity for the year ended December 31, 2020:

	Outstanding Options	Weighted-Average Exercise Price Per Share	Weighted Average Remaining Contractual Term (in years)	Aggregate Intrinsic Value (in thousands) (a)
Balances as of December 31, 2019	1,821,093	$ 5.64	9.24	$ 17
Granted	852,368	$ 4.29		
Exercised	(3,000)	$ 2.45		
Forfeitures and cancellations	(207,144)	$ 2.45		
Balances as of December 31, 2020 (b)	2,463,317	$ 3.71	7.98	$ 4,726
Options exercisable as of December 31, 2020 (b)	1,041,624	$ 3.52	6.91	$ 2,177

(a) Aggregate intrinsic value in this table was calculated as the positive difference, if any, between the closing price per share of the Company's common stock on December 31, 2020 of $5.35 and the price of the underlying options.
(b) The weighted-average exercise price per share of the options outstanding and exercisable as of December 31, 2020 includes the impact of the repricing of 1,475,093 options on April 22, 2020 at $2.45 per share.

The aggregate intrinsic value of stock options exercised was $9,000 and $0 for the years ended December 31, 2020 and 2019, respectively. Cash received from stock options exercised was $7,000 and $69,000 for the years ended December 31, 2020 and 2019, respectively.

The fair value of stock options that vested in the years ended December 31, 2020 and 2019 was $4.1 million and $1.4 million, respectively. The weighted-average grant-date fair value of options granted was $3.11 and $4.65 for the years ended December 31, 2020 and 2019, respectively.

As of December 31, 2020, unrecognized compensation expense related to unvested stock options was $6.6 million and is expected to be recognized over a weighted-average period of 2.3 years.

2018 Employee Stock Purchase Plan

In October 2018, the Company adopted the 2018 Equity Stock Purchase Plan (ESPP) whereby eligible employees may elect to withhold up to 15% of their earnings to purchase shares of the Company's common stock at a price per share equal to the lower of (i) 85% of the fair market value of a share of the Company's common stock on the first date of an offering or (ii) 85% of the fair market value of a share of the Company's common stock on the date of the purchase right (purchase right). Initially, 343,275 shares of the Company's common stock were approved for issuance under the ESPP pursuant to purchase rights granted to the Company's employees or to employees of any of the Company's designated affiliates. The number of shares of the Company's common stock reserved for issuance will automatically increase on January 1 of each calendar year through January 1, 2028, by the lesser of (1) 1.0% of the total number of shares of the Company's common stock outstanding on the last day of the calendar month before the date of the automatic increase, and (2) 343,275 shares; provided that before the date of any such increase, the Board may determine that such increase will be less than the amount set forth in clauses (1) and (2).

As of December 31, 2020, the Company had issued 78,764 shares of common stock under the ESPP, 65,443 of which were issued during the year ended December 31, 2020. The Company had 612,529 shares available for future issuance under the ESPP as of December 31, 2020.

Liability for Early Exercise of Restricted Stock Options

All stock option grants under the 2017 Plan provide for exercise of the stock option prior to vesting. Shares of common stock issued upon exercise of unvested options are subject to repurchase by the Company at the respective original exercise price until vested. Consideration received for the exercise of unvested stock options is recorded as a liability and reclassified into equity as the related award vests.

As of December 31, 2020 and 2019, 153,690 and 265,232 unvested shares issued under early exercise provisions were subject to repurchase by the Company, respectively. The balance sheet reflects an unvested stock liability of $0.1 million and $0.2 million as of December 31, 2020 and 2019, respectively. The short-term portion of the unvested stock liability totals approximately $72,000 as of December 31, 2020, and is classified as accrued expenses on the accompanying consolidated balance sheet. The long-term portion of the unvested stock liability totals approximately $53,000 as of December 31, 2020, and is classified as other non-current liabilities on the accompanying consolidated balance sheet.

Stock-based Compensation Expense

On May 28, 2020, the Compensation Committee of the Board issued to its Executive Chairman, Chief Executive Officer and two non-management directors retention stock options to purchase an aggregate of 169,368 shares of the Company's common stock. These stock option grants immediately vested at the date of grant. The non-cash stock-based compensation expense recognized in the year ended December 31, 2020 associated with these stock option grants totaled $0.4 million. At the time, the Executive Chairman and Chief Executive Officer voluntarily agreed to a 65% and an 85% reduction, respectively, in their base salaries otherwise payable for the remainder of 2020. The two non-management directors voluntarily agreed to forego 100% of their annual cash retainers otherwise payable to such directors for the remainder of 2020.

Total non-cash stock-based compensation expense for all stock awards and purchase rights, net of forfeitures recognized as they occur, that was recognized in the consolidated statement of operations is as follows (in thousands):

	Year Ended December 31, 2020	Year Ended December 31, 2019
Research and development	$ 1,773	$ 1,207
General and administrative	2,044	1,045
Total	$ 3,817	$ 2,252

The weighted-average assumptions used in the Black-Scholes option pricing model to determine the fair value of the employee and nonemployee stock option grants were as follows:

	Year Ended December 31, 2020	Year Ended December 31, 2019
Risk-free interest rate	0.65%	2.23%
Expected volatility	89.56%	93.58%
Expected term (in years)	5.77	5.77
Expected dividend yield	0%	0%

Risk-free interest rate. The risk-free rate assumption is based on the U.S. Treasury instruments, the terms of which were consistent with the expected term of the Company's stock options.

Expected volatility. Due to the Company's limited operating history and lack of company-specific historical or implied volatility as a private company, the expected volatility assumption was determined by examining the historical volatilities of a group of industry peers whose share prices are publicly available.

Expected term. The expected term of stock options represents the weighted-average period the stock options are expected to be outstanding. The Company uses the simplified method for estimating the expected term as provided by the SEC. The simplified method calculates the expected term as the average of the time-to-vesting and the contractual life of the options.

Expected dividend yield. The expected dividend assumption is based on the Company's history and expectation of dividend payouts. The Company has not paid and does not intend to pay dividends.

Forfeitures. The Company reduces stock-based compensation expense for actual forfeitures during the period.

Common Stock Reserved for Future Issuance

Common stock reserved for future issuance consists of the following as of December 31, 2020 and 2019:

	December 31, 2020	December 31, 2019
Stock options issued and outstanding	2,463,317	1,821,093
Warrants for common stock	80,428	80,428
Awards available under the 2018 Equity Incentive Plan	1,039,531	813,473
Employee stock purchase plan	612,529	503,716
Total	4,195,805	3,218,710

10. Commitments and Contingencies

Leases and Other Commitments

The Company leases certain office space in La Jolla and South San Francisco, California under non-cancelable operating leases. The leases for spaces in La Jolla and South San Francisco expire in February 2022. Rent expense was $0.2 million for both the years ended December 31, 2020 and 2019.

The future minimum lease payments required under non-cancelable leases as of December 31, 2020, are summarized as follows (in thousands):

Years Ending December 31,	
2021	$ 153
2022	26
Total	$ 179

The Company enters into service agreements with indemnification clauses in the ordinary course of business. Pursuant to such clauses, the Company indemnifies, defends, holds harmless, and agrees to reimburse the indemnified party for losses suffered or incurred by third party claims arising out of the indemnified party's performance of service. The Company has not incurred costs to defend lawsuits pursuant to these indemnification clauses.

Litigation

As of December 31, 2020, there was no litigation against the Company.

11. Income Taxes

The components of loss before income tax provision (benefit) for the years ended December 31, 2020 and 2019 consisted of the following (in thousands):

	Year Ended December 31, 2020	Year Ended December 31, 2019
U.S.	(29,420)	(23,167)
Foreign	(393)	(2,433)
	$ (29,813)	$ (25,600)

The Company has not recorded a current or deferred tax expense or benefit for the years ended December 31, 2020 and 2019.

The following is a reconciliation of the expected statutory federal income tax provision to our actual income tax provision for the years ended December 31, 2020 and 2019 (in thousands):

	Year Ended December 31, 2020	Year Ended December 31, 2019
Income taxes at statutory rates	$ (6,261)	$ (5,376)
State income tax, net of federal benefit	-	1
Stock-based compensation	97	276
Permanent items	15	54
Federal research and orphan drug credits	(445)	(684)
Foreign rate differential	367	(158)
Change in federal valuation allowance	6,227	5,887
	$ -	$ -

The tax effects of temporary differences that give rise to significant portions of the deferred tax assets and deferred tax liabilities as of December 31, 2020 and 2019 are as follows (in thousands):

	December 31, 2020	December 31, 2019
Deferred tax assets:		
Net operating loss carryforward	$ 12,338	$ 7,212
Credits	1,940	1,227
Intangibles	118	129
Equity compensation	888	188
Other	286	221
Total deferred tax assets	15,570	8,977
Valuation allowance	(15,564)	(8,976)
Total deferred tax assets, net of allowance	$ 6	$ 1
Deferred tax liabilities:		
Other	(6)	(1)
Total deferred tax liabilities	$ (6)	$ (1)
Net deferred taxes	$ -	$ -

The Company has established a valuation allowance against its net deferred tax assets due to the uncertainty surrounding the realization of such assets. The Company periodically evaluates the recoverability of the deferred tax assets. At such time as it is determined that it is more likely than not that deferred assets are realizable, the valuation allowance will be reduced. The Company has recorded a full valuation allowance of $15.6 million as of December 31, 2020 as it does not believe it is more likely than not that certain deferred tax assets will be realized primarily due to the generation of pre-tax book losses in the current year, the lack of feasible tax-planning strategies, the limited existing taxable temporary differences, and the subjective nature of forecasting future taxable income into the future. The Company increased its valuation allowance by approximately $6.6 million during the year ended December 31, 2020.

At December 31, 2020, the Company had federal and California tax loss carry forwards of approximately $53.9 million and $30.7 million, respectively. The federal net operating loss carryover includes $53.0 million of net operating losses generated subsequent to 2017. Federal net operating losses generated after December 31, 2017 carryover indefinitely and may generally be used to offset up to 80% of future taxable income. The federal net operating losses generated prior to 2018 as well as the state net operating loss carry forwards, begin to expire in 2037 unless previously utilized. The Company has $1.9 million of Australian net operating loss carryforwards as of December 31, 2020 that are carried forward indefinitely.

At December 31, 2020, the Company had federal and state tax credit carry forwards of approximately $1.4 million and $0.6 million, respectively, after reduction for uncertain tax positions. The Company has not performed a formal research and development credit study with respect to these credits. The federal credits will begin to expire in 2037, if unused, and the state credits carry forward indefinitely.

Pursuant to the Internal Revenue Code of 1986, as amended (IRC), specifically Section 382 and 383, the Company's ability to use net operating loss and research and development tax credit carry forwards (tax attribute carry forwards) to offset future taxable income is limited if the Company experiences a cumulative change in ownership of more than 50% within a three-year testing period. The Company has not completed an ownership change analysis pursuant to IRC Section 382. If ownership changes within the meaning of IRC Section 382 are identified as having occurred, the amount of remaining tax attribute carry forwards available to offset future taxable income and income tax expense in future years may be significantly restricted or eliminated. Further, our deferred tax assets associated with such tax attributes could be significantly reduced upon realization of an ownership change within the meaning of IRC Section 382.

The following table summarizes the reconciliation of the unrecognized tax benefits activity during the years ended December 31, 2020 and 2019 (in thousands):

	Year Ended December 31, 2020	Year Ended December 31, 2019
Unrecognized tax benefits – beginning	$ 360	$ 89
Gross increases – tax positions in prior period	1,988	-
Gross decreases – tax positions in prior period	-	-
Gross increase – current-period tax positions	319	271
Gross decrease – current-period tax positions	-	-
Settlements	-	-
Lapse of statute of limitations	-	-
Unrecognized tax benefits – ending	$ 2,667	$ 360

The unrecognized tax benefit amounts are reflected in the determination of the Company’s deferred tax assets. If recognized, none of these amounts would affect the Company’s effective tax rate, since it would be offset by an equal corresponding adjustment in the deferred tax asset valuation allowance. The Company does not foresee material changes to its liability for uncertain tax benefits within the next twelve months.

The Company's policy is to recognize interest and/or penalties related to income tax matters in income tax expense. The Company had no accrual for interest or penalties on the Company's consolidated balance sheet as of December 31, 2020 and has not recognized interest and/or penalties in the consolidated statement of operations for the year ended December 31, 2020.

All tax years for both federal and state purposes remain open and subject to examination by tax jurisdictions.

On March 27, 2020, the United States enacted the Coronavirus Aid, Relief and Economic Security Act (CARES Act). The CARES Act is an emergency economic stimulus package that includes spending and tax breaks to strengthen the United States economy and fund a nationwide effort to curtail the effect of COVID-19. While the CARES Act provides sweeping tax changes in response to the COVID-19 pandemic, some of the more significant provisions are the extension of the carryback period of certain losses to five years, and the suspension of the 80 percent limitation imposed by the Tax Cuts and Jobs Act of 2017 (TCJA) on utilization of net operating losses generated in 2018, 2019 and 2020 to offset taxable income generated in tax years prior to 2021. The CARES Act also increased the ability to deduct interest expense from 30 percent, as imposed by the TCJA, to 50 percent of modified taxable income. The CARES Act also provides a credit against employee wages, the opportunity to defer payment of a portion of federal payroll taxes to December 2021 and December 2022, and enhanced small business loans to assist businesses impacted by the pandemic. The Company’s tax provision and financial position was not materially impacted by the CARES Act.

On December 27, 2020, the United States enacted the Consolidated Appropriations Act, which extended and modified many of the tax related provisions of the CARES Act. The Company does not anticipate a material impact of the Consolidated Appropriations Act on its tax provision or financial position.

12. Retirement Plan

The Company sponsors an employee savings plan that qualifies as a deferred salary arrangement under Section 401(k) of the IRC. Participating employees may defer up to the Internal Revenue Service annual contribution limit. The Company did not made any contributions for the years ended December 31, 2020 or 2019.

13. Selected Quarterly Financial Data (unaudited)

The following table contains unaudited quarterly financial information for the years ended December 31, 2020 and 2019. The Company believes that the following information reflects all normal recurring adjustments necessary for a fair statement of the information for the periods presented. The operating results for any quarter are not necessarily indicative of results for any future period.

in thousands (except per share amounts)	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
Year Ended December 31, 2020				
Operating expenses	$ 7,452	$ 6,610	$ 6,516	$ 8,970
Net loss	(7,837)	(6,461)	(6,597)	(8,918)
Net loss per common share, basic and diluted	$ (0.45)	$ (0.37)	$ (0.31)	$ (0.36)
Year Ended December 31, 2019				
Operating expenses	$ 6,348	$ 6,439	$ 6,324	$ 7,616
Net loss	(5,950)	(6,069)	(6,014)	(7,567)
Net loss per common share, basic and diluted	$ (0.34)	$ (0.35)	$ (0.35)	$ (0.44)

14. Subsequent Events

On February 3, 2021, the Company entered into a securities purchase agreement (the Securities Purchase Agreement) with two institutional investors (the Purchasers), relating to the issuance and sale (the Offering) of an aggregate of 4,285,710 shares of common stock and warrants to purchase 1,285,713 shares of common stock (the Warrants) for aggregate gross proceeds to the Company from this Offering of approximately $30.0 million, excluding any proceeds the Company may receive upon exercise of the Warrants. No underwriter or placement agent participated in the Offering.

The Warrants are exercisable immediately upon issuance at an initial exercise price of $14.00 per share and are exercisable on a cashless basis. The Warrants expire on the earlier of (i) the fifth anniversary of issuance or (ii) the 15th calendar date following the date on which the Company closes upon an equity financing that results in not less than $25 million of gross proceeds to the Company at a price per share of common stock equal to or greater than $25.00, at which time, all remaining Warrants will automatically exercise on a cashless basis.

The exercise price and the number of shares of common stock purchasable upon the exercise of the Warrants are subject to adjustment upon the occurrence of specific events, including stock dividends, stock splits, reclassifications and combinations of the Company’s common stock.

Pursuant to the terms of the Securities Purchase Agreement, the Company agreed to appoint Dr. Yu (Katherine) Xu, Ph. D. to the Board as a nominee of the Purchasers.

Exhibit 10.28

Equillium, Inc.

Original Offer Letter Date: August 31, 2018
First Amendment to Offer Letter Effective: January 1, 2020
Amended and Restated Effective: January 26, 2021

Joel Rothman
PO Box 326
Moss Beach, CA 94038

Re: Amended and Restated Employment Terms

Dear Joel:

Equillium, Inc. (the "**Company**") is pleased to offer you the position of Chief Development Officer on the following terms.

You will report to the Chief Medical Officer. Your home office will be in the San Francisco bay area at a location mutually determined by you and the Company. You may be asked to travel to our offices located in La Jolla, California for business purposes, and you may also be required to work at other offices and locations from time to time as required to perform your job duties. The Company may change your position, duties and work location from time to time in its discretion.

The Company's regular business hours are from 8:00 a.m. to 5:00 p.m., Monday through Friday. As an exempt salaried employee, you will be expected to work additional hours, including evenings and weekends, as required to perform your job duties, and you will not be eligible for overtime pay.

Your base salary will be at the annualized rate of $375,000, less required and designated payroll deductions and withholdings, paid semi-monthly ("**Base Salary"**).

You will be eligible to earn an annual discretionary performance-based bonus at an annual target amount of forty percent (40%) of your base salary earned during the applicable year ("**Target Bonus**"), based on the attainment of individual and Company objectives to be determined and approved by the Company. The Company's payment, and the amount, of any such bonus shall be in the sole discretion of the Company. No amount of bonus is guaranteed, and, in addition to the other conditions for earning any such bonus, you must remain an employee in good standing of the Company on the date the bonus is determined and paid.

In the event you are terminated by the Company without Cause (as defined below), you will be eligible to receive an amount equal to your then current Base Salary for six (6) months less required deductions and withholdings and the Company shall pay the premiums for your group health insurance COBRA continuance coverage for six (6) months following such termination without Cause or, if earlier, until the date on which you become eligible to receive comparable benefits

from another employer (the "**Termination Benefits**").

"**Cause**" for termination shall mean that the Company has determined in its sole discretion that you have engaged in any of the following: (i) a material breach of any covenant or condition under the terms of your employment agreement or any other agreement between the parties; (ii) any act constituting dishonesty, insubordination, fraud, immoral or disreputable conduct; (iii) any conduct which constitutes a felony under applicable law; (iv) violation of any written Company policy or any act of misconduct; (v) negligence or incompetence in the performance your duties or failure to perform such duties in a manner satisfactory to the Company after the expiration of ten (10) days without cure after written notice of such failure; or (vii) breach of fiduciary duty or the duty of loyalty.

In the event you are terminated by the Company without Cause within one (1) month prior to, or twelve (12) months following, the effective date of a Change in Control (as defined in the Equity Plan), you will be eligible to receive an amount equal to your then current Base Salary for twelve (12) months less required deductions and withholdings, an amount equal to your then current Target Bonus less required deductions and withholdings and the Company shall pay the premiums for your group health insurance COBRA continuance coverage for twelve (12) months following such termination without Cause or, if earlier, until the date on which you become eligible to receive comparable benefits from another employer ("**Change of Control Benefits**").

Termination Benefits or Change of Control Benefits, if and when due, shall be paid in equal installments beginning on the Company's first regularly scheduled payroll date following the Release Effective Date (as defined below) with the remaining installments occurring on the Company's regularly scheduled payroll dates thereafter. Notwithstanding the foregoing, you shall not receive any of the benefits described in the two paragraphs immediately above unless you deliver to the Company an effective, general release of claims in favor of the Company, in such form as provided by the Company, which has become effective in accordance with its terms (the date that such release can no longer be revoked is referred to as the "**Release Effective Date**"). In no event will you be entitled to both Termination Benefits and Change of Control Benefits. If you are entitled to receive Termination Benefits and thereafter become entitled to Change of Control Benefits, any previously provided Termination Benefits shall offset Change of Control Benefits.

You will be eligible to participate in the Company's standard employee benefits (pursuant to the terms and conditions of the benefit plans and applicable policies), as they may be terminated or changed from time to time within the Company's discretion.

As a Company employee, you will be expected to comply with Company policies and procedures, which will be provided to you. As a condition of employment, you must read, sign and comply with the enclosed Proprietary Information and Inventions Assignment Agreement ("**Proprietary Information Agreement**"), which, among other provisions, prohibits any unauthorized use or disclosure of Company proprietary, confidential or trade secret information.

In your work for the Company, you will be prohibited from using or disclosing any confidential, proprietary or trade secret information or other property of any former employer or third party to whom you have an obligation of confidentiality. Rather, you will be required to use only

information that is generally known and used by persons with training and experience comparable to your own, is common knowledge in the industry or otherwise legally in the public domain, or is otherwise provided or developed by the Company. You agree that you will not bring onto Company premises or use in your work for the Company any confidential, proprietaryor trade secret information or other property belonging to any former employer or third party that you are not authorized to use and disclose. You represent further that you have disclosed to the Company in writing any agreement you may have with any third party (e.g., a former employer) that may limit your ability to perform your duties to the Company, or that could present a conflict of interest with the Company, including but not limited to disclosure (and a copy) of any contractual restrictions on solicitations or competitive activities. By accepting employment with the Company, you are representing that you will be able to perform your job duties within these parameters, and that you are not in unauthorized possession or control of any confidential, proprietary or trade secret information or other property of any former employer or third party.

Your employment relationship with the Company will be at will. You may terminate your employment with the Company at any time and for any reason whatsoever simply by notifying the Company. Likewise, the Company may terminate your employment at any time, with or without cause or advance notice. Your employment at-will status can only be changed in a written agreement signed by you and the Board.

As required by law, this offer is subject to satisfactory proof of your identity and right to work in the United States. Additionally, this offer is subject to you providing satisfactory professional references to the Company. Further, this offer is conditioned on completion, with results satisfactory to the Company, of a required pre-employment background check. You must timely provide all information and documents required to complete that process.

To ensure the rapid and economical resolution of disputes that may arise in connection with youremployment with the Company, you and the Company both agree that any and all disputes, claims, or causes of action, in law or equity, including but not limited to statutory claims, arising from or relating to the enforcement, breach, performance, or interpretation of this letter agreement, your employment with the Company, or the termination of your employment with theCompany, will be resolved pursuant to the Federal Arbitration Act, 9 U.S.C. §1-16, and to the fullest extent permitted by law, by final, binding and confidential arbitration conducted by JAMS, Inc. ("**JAMS**") or its successors by a single arbitrator. The arbitration will be held in San Diego, California, or such other location as then-agreed by the parties. ***Both you and the Company acknowledge that by agreeing to this arbitration procedure, you each waive the rightto resolve any such dispute through a trial by jury or judge or administrative proceeding***. Any such arbitration proceeding will be governed by JAMS' then applicable rules and procedures for employment disputes, which can be found at http://www.jamsadr.com/rules-clauses/ and which will be provided to you upon request. In any such proceeding, the arbitrator shall: (a) have the authority to compel adequate discovery for the resolution of the dispute and to award such relief as would otherwise be permitted by law; and (b) issue a written arbitration decision including the arbitrator's essential findings and conclusions and a statement of the award. You and the Company each shall be entitled to all rights and remedies that either would be entitled to pursue in a court of law. Nothing in this Agreement is intended to prevent either the Company or you from obtaining injunctive relief in court to prevent irreparable harm pending the conclusion of any such arbitration pursuant to applicable

law. The Company shall pay all filing fees in excess of those which would be required if the dispute were decided in a court of law, and shall pay the arbitrator's fees and any other fees or costs unique to arbitration. Any awards or orders in such arbitrations may be entered and enforced as judgments in the federal and state courts of any competent jurisdiction.

The severance and other benefits provided in this letter agreement are intended to qualify for an exemption from application of Section 409A of the Internal Revenue Code of 1986, as amended (the "**Code**") and the regulations and other guidance thereunder and any state law of similar effect (collectively "**Section 409A**") or comply with its requirements to the extent necessary to avoid adverse personal tax consequences under Section 409A, and any ambiguities herein shall be interpreted accordingly. Severance benefits shall not commence until you have a "**Separation from Service**" (as defined under U.S. Treasury Regulation Section 1.409A-1(h), without regard to any alternative definition thereunder). Each installment of severance benefits is a separate "payment" for purposes of Treasury Regulations Section 1.409A-2(b)(2)(i), and the severance benefits are intended to satisfy the exemptions from application of Section 409A provided under Treasury Regulations Sections 1.409A-1(b)(4), 1.409A-1(b)(5) and 1.409A-1(b)(9). However, if such exemptions are not available and you are, upon Separation from Service, a "specified employee" for purposes of Section 409A, then, solely to the extent necessary to avoid adverse personal tax consequences under Section 409A, the timing of the severance benefits payments shall be delayed until the earlier of (i) six (6) months and one day after your Separation from Service, or (ii) your death.

The Release Effective Date shall in no event be later than sixty (60) days following your Separation from Service. If the severance benefits are not covered by one or more exemptions from the application of Section 409A and the Release Effective Date could become effective in the calendar year following the calendar year in which your Separation from Service occurs, the Release Effective Date will be deemed (for the purposes of severance hereunder) effective in the second calendar year. Except to the minimum extent that payments must be delayed because you are a "specified employee" or until the Release Effective Date, all amounts will be paid as soon as practicable in accordance with the schedule provided herein and in accordance with the Company's normal payroll practices. Any reimbursement payments will be paid to you, subject to Company reimbursement policies, and within 30 days after the date you submit receipts for the expenses, provided you submit those receipts within 45 days after you incur the expense. To the extent that any reimbursements payable to you are subject to the provisions of Section 409A, any such reimbursements will be paid no later than December 31 of the year following the year in which the expense was incurred, the amount of expenses reimbursed in one year will not affect the amount eligible for reimbursement in any subsequent year, and the right to reimbursement under this agreement will not be subject to liquidation or exchange for another benefit.

This letter agreement, together with your Proprietary Information Agreement, will form the complete and exclusive statement of your employment agreement with the Company. The terms in this letter agreement supersede any other agreements, promises or representations made to youby anyone, whether oral or written, regarding the subject matters hereof. This letter agreement cannot be changed except in a written agreement signed by you and the Board, with the exception of those changes expressly reserved to the Company's discretion in this letter agreement. This letter agreement is governed by the laws of the state of California, without reference to conflicts of law principles. If any provision of this letter agreement shall be held invalid or unenforceable in any respect, such invalidity or unenforceability shall not affect the other provisions of this letter agreement, and such provision will be reformed, construed and enforced so as to render it valid and enforceable consistent with the general intent of the parties insofar as possible under applicable law. With respect to the enforcement of this letter agreement, no waiver of any right hereunder shall be effective unless it is in writing.

Sincerely,

/s/ BRUCE STEEL
Bruce Steel
President and Chief Executive Officer

Accepted:

/s/ JOEL ROTHMAN *March 18, 2021*
Joel Rothman Date

EQUILLIUM, INC.

NON-EMPLOYEE DIRECTOR COMPENSATION POLICY
(amended and restated, effective as of March 4, 2021)

Each member of the Board of Directors (the "***Board***") who is not also serving as an employee of or consultant to Equillium, Inc. (the "***Company***") or any of its subsidiaries (each such member, an "***Eligible Director***") will receive the compensation described in this Non-Employee Director Compensation Policy for his or her Board service. An Eligible Director may decline all or any portion of his or her compensation by giving notice to the Company prior to the date cash may be paid or equity awards are to be granted, as the case may be. This policy may be amended at any time in the sole discretion of the Board or the Compensation Committee of the Board.

Annual Cash Compensation

The annual cash compensation amount set forth below is payable to Eligible Directors in equal quarterly installments, payable in arrears on the last day of each fiscal quarter in which the service occurred. If an Eligible Director joins the Board or a committee of the Board at a time other than effective as of the first day of a fiscal quarter, each annual retainer set forth below will be pro-rated based on days served in the applicable fiscal year, with the pro-rated amount paid for the first fiscal quarter in which the Eligible Director provides the service and regular full quarterly payments thereafter. All annual cash fees are vested upon payment.

1. Annual Board Service Retainer:

    a. All Eligible Directors: $40,000
    b. Chairman of the Board Service Retainer (in addition to Eligible Director Service Retainer): $20,000

2. Annual Committee Chair Service Retainer:

    a. Chairman of the Audit Committee: $15,000
    b. Chairman of the Compensation Committee: $10,000
    c. Chairman of the Nominating and Corporate Governance Committee: $8,000

3. Annual Committee Member Service Retainer (not applicable to Committee Chairs):

    a. Member of the Audit Committee: $7,500
    b. Member of the Compensation Committee: $5,000
    c. Member of the Nominating and Corporate Governance Committee: $4,000

Equity Compensation

The equity compensation set forth below will be granted under the Company's 2018 Equity Incentive Plan (the "***Plan***"). All stock options granted under this policy will be nonstatutory stock options, with an exercise price per share equal to 100% of the Fair Market Value (as defined in the Plan) of the underlying common stock of the Company (the "***Common Stock***") on the date of grant, and a term of ten years from the date of grant (subject to earlier termination in connection with a termination of service as provided in the Plan, provided that upon a termination of service other than for death, disability or cause, the post-termination exercise period will be 12 months from the date of termination). For purposes of this Policy, "***Value***" means with respect to any award of stock options the grant date fair value of the option (i.e., Black-Scholes Value) determined in accordance with the reasonable assumptions and methodologies employed by the

Company for calculating the fair value of options under Accounting Standards Codification 718, or any successor thereto.

1. Initial Grant: For each Eligible Director who is first elected or appointed to the Board, on the date of such Eligible Director's initial election or appointment to the Board (or, if such date is not a market trading day, the first market trading day thereafter), the Eligible Director will be granted a stock option to purchase such number of shares of Common Stock with a Value of $180,000 (the "***Initial Grant***"). The shares subject to each Initial Grant will vest in equal monthly installments over a three year period such that the option is fully vested on the third anniversary of the date of grant, subject to the Eligible Director's Continuous Service (as defined in the Plan) through each such vesting date and will vest in full upon a Change in Control (as defined in the Plan).

2. Annual Grant: On the date of each annual stockholder meeting of the Company, each Eligible Director who continues to serve as a non-employee member of the Board following such stockholder meeting will be granted a stock option to purchase such number of shares of Common Stock with a Value of $90,000 (the "***Annual Grant***"). The shares subject to the Annual Grant will vest in equal monthly installments over the 12 months following the date of grant, provided that the Annual Grant will in any case be fully vested on the date of Company's next annual stockholder meeting, subject to the Eligible Director's Continuous Service (as defined in the Plan) through such vesting date and will vest in full upon a Change in Control (as defined in the Plan).

Exhibit 23.1

Consent of Independent Registered Public Accounting Firm

The Board of Directors
Equillium, Inc.:

We consent to the incorporation by reference in the registration statement (No. 333-237407) on Form S-8, (No. 333-230536) on Form S-8, (No. 333-227387) on Form S-8, and (No. 333-234683) on Form S-3 of Equillium, Inc. of our report dated March 24, 2021, with respect to the consolidated balance sheets of Equillium, Inc. as of December 31, 2020 and 2019, the related consolidated statements of operations and comprehensive loss, stockholders' equity, and cash flows for each of the years in the two-year period ended December 31, 2020, and the related notes, which report appears in the December 31, 2020 annual report on Form 10-K of Equillium, Inc.

/s/ KPMG LLP

San Diego, California
March 24, 2021

Exhibit 31.1

CERTIFICATION PURSUANT TO
SECTION 302 OF THE SARBANES OXLEY ACT OF 2002

I, Bruce D. Steel, certify that:

1. I have reviewed this annual report on Form 10-K of Equillium, Inc., a Delaware corporation (the "registrant");

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

   (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation;

   (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

   (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: March 24, 2021

/s/ Bruce D. Steel
Bruce D. Steel
Chief Executive Officer
(Principal Executive Officer)

Exhibit 31.2

CERTIFICATION PURSUANT TO
SECTION 302 OF THE SARBANES OXLEY ACT OF 2002

I, Jason A. Keyes, certify that:

1. I have reviewed this annual report on Form 10-K of Equillium, Inc., a Delaware corporation (the "registrant");

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

   (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   (b) Designed such control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation;

   (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

   (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: March 24, 2021

/s/ Jason A. Keyes
Jason A. Keyes
Chief Financial Officer
(Principal Financial and Accounting Officer)

Exhibit 32.1

Certification Pursuant to 18 U.S.C. Section 1350, as Adopted
Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002

Pursuant to the requirement set forth in Rule 13a-14(b) of the Securities Exchange Act of 1934, as amended, (the "Exchange Act") and Section 1350 of Chapter 63 of Title 18 of the United States Code, each of the undersigned hereby certifies in his capacity as an officer of Equillium, Inc. (the "Company"), that, to the best of his knowledge:

(1) the Company's Annual Report on Form 10-K for the annual period ended December 31, 2020, to which this Certification is attached as Exhibit 32.1 (the "Report") fully complies with the requirements of Section 13(a) or Section 15(d) of the Exchange Act; and

(2) the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

/s/ Bruce D. Steel
Bruce D. Steel
Chief Executive Officer
(Principal Executive Officer)

Date: March 24, 2021

/s/ Jason A. Keyes
Jason A. Keyes
Chief Financial Officer
(Principal Financial and Accounting Officer)

Date: March 24, 2021

This certification accompanies the Annual Report on Form 10-K to which it relates, is not deemed filed with the Securities and Exchange Commission and is not to be incorporated by reference into any filing of Equillium, Inc. under the Securities Act of 1933, as amended, or the Exchange Act (whether made before or after the date of the Form 10-K), irrespective of any general incorporation language contained in such filing.