Risk Factors Comparison 2023-03-29 to 2022-03-03 Form: 10-K

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● We are a clinical- stage biopharmaceutical company with a history of losses. We expect to continue to incur significant losses for the foreseeable future and may never achieve or maintain profitability, which could result in a decline in the market value of our Class A common stock **. ● Our ability to continue as a going concern requires that we obtain sufficient funding to finance our operations, which may not be available on acceptable terms, or at all. A failure to obtain this necessary capital when needed could force us to delay, limit, reduce or terminate our drug development efforts, which may materially and adversely affect our business, financial condition, results of operations and prospects** . ● ATRC- 101 is in clinical trials. It may fail in development or suffer delays that materially and adversely affect its commercial viability. ● ATRC- 101 may not demonstrate the combination of safety and efficacy necessary to become approvable or commercially viable. ● The COVID- 19 pandemic **may** ~~continues~~ **continue** to impact our business, and could have a material adverse impact on our business and our operations, including at our laboratories and office locations and at our clinical trial sites, as well as the business and operations of our manufacturers, CROs or other third parties with whom we conduct business. ● Failure to successfully validate, develop and obtain regulatory approval for companion diagnostics for our product candidates could harm our drug development strategy and operational results. ● We may not be successful in our efforts to use and expand our discovery platform to build a pipeline of product candidates **and develop and commercialize them** . ● Our approach to developing and identifying antibodies using our discovery platform is novel and unproven and may not result in marketable products. ● The market may not be receptive to our current or potential future product candidates, and we may not generate **- 5-** any revenue from the sale or licensing of our product candidates. ● If there are undesirable side effects caused by ATRC- 101 or any potential future product candidate in clinical trials or after receiving marketing approval, our ability to market and derive revenue from the product candidate could be compromised. ● We will need substantial additional funds to advance development of product candidates and our discovery platform, and we cannot guarantee that we will have sufficient funds available in the future to develop and ~~- 5-~~ commercialize our current or potential future product candidates. ● We may expend our limited resources to pursue a particular product candidate and fail to capitalize on product candidates that may be more profitable or for which there is a greater likelihood of success. ● We have obtained rights to use human samples in furtherance of our research and development of our current and potential future product candidates. However, if we fail to obtain appropriate consent or exceed the scope of the permission to use these samples, we may become liable for monetary damages for, obligated to pay continuing royalties for or required to cease usage of the samples. ● We have entered into, and may in the future enter into, strategic transactions for the research, development and commercialization of certain of our current and potential future product candidates. If any of these transactions are not successful, then we may not be able to capitalize on the market potential of such product candidates. Further, we may not be able to enter into future transactions on acceptable terms, if at all, which could adversely affect our ability to develop and commercialize current and potential future product candidates, impact our cash position, increase our expense, and present significant distractions to our management. ● If third parties on which we ~~intend~~ **have and will continue** to rely to conduct certain preclinical studies, or any future clinical trials, do not perform as contractually required, fail to satisfy regulatory or legal requirements or miss expected deadlines, our development program could be delayed or fail, which would have material and adverse impacts on our business and financial condition. ● Because we may rely on third parties for manufacturing and supply of our product candidates, some of which are or may be sole source vendors, for preclinical and clinical development materials and commercial supplies, our supply may become limited or interrupted or may not be of satisfactory quantity or quality. Risks Related to Our Intellectual Property ● If we are unable to obtain or protect intellectual property rights related to our technology and current or future product candidates, or if our intellectual property rights are inadequate, we may not be able to compete effectively. ● If we fail to comply with our obligations under any license, collaboration or other intellectual property- related agreements, we may be required to pay damages and could lose intellectual property rights that may be necessary for developing, commercializing and protecting our current or future technologies or product candidates or we could lose certain rights to grant sublicenses. ● Patent terms may not be able to protect our competitive position for an adequate period of time with respect to our current or future technologies or product candidates. ● Other companies or organizations may challenge our or our licensors' patent rights or may assert patent rights that prevent us from developing and commercializing our current or future products. ● Third parties may initiate legal proceedings alleging that we are infringing, misappropriating or violating their intellectual property rights, the outcome of which would be uncertain and could have a material adverse impact on the success of our business. Risks Related to Government Regulation ● Clinical development includes a lengthy and expensive process with an uncertain outcome, and results of earlier studies and trials may not be predictive of future trial results **.** ● We may be unable to obtain U. S. or foreign regulatory approval and, as a result, be unable to commercialize ATRC- 101 or potential future product candidates. ● Even if we receive regulatory approval for any of our current or potential future product candidates, we will be subject to ongoing regulatory obligations and continued regulatory review, which may result in significant additional expense. Additionally, our current or potential future product candidates, if approved, could be **- 6-** 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. ● We may attempt to secure approval from the **United States Food and Drug Administration, or** FDA **,** through the use of accelerated registration pathways. If unable to obtain approval under an accelerated pathway, we may be required to conduct additional preclinical studies or clinical trials which could increase the expense of obtaining, reduce the likelihood of obtaining or delay the timing of

obtaining, necessary marketing approvals. Even if we receive **approval for** accelerated ~~approval~~ **registration pathways** from the ~~- 6 -~~ FDA, if our confirmatory trials do not verify clinical benefit, or if we do not comply with rigorous post- marketing requirements, the FDA may seek to withdraw accelerated approval. ● We are subject to U. S. and foreign anti- corruption and anti- money laundering laws with respect to our operations and non- compliance with such laws can subject us to criminal or civil liability and harm our business. Risks Related to Our Class A Common Stock ● Our stock price may be volatile and purchasers of our Class A common stock could incur substantial losses. ● Our principal stockholders and management own a significant percentage of our stock and will be able to exert significant control over matters subject to stockholder approval. ● Future sales and issuances of our Class A common stock or Class B common stock or rights to purchase Class A common stock or Class B common stock, including pursuant to our 2019 Equity Incentive Plan, could result in additional dilution of the percentage ownership of our stockholders and could cause our stock price to fall. ● Our ability to use net operating losses ~~, or NOLs,~~ to offset future taxable income may be subject to certain limitations.- 7- PART IItem 1. BusinessOverviewWe are a clinical- stage biopharmaceutical company utilizing our differentiated platform **primarily** to discover and develop novel antibody- based therapeutics to treat a range of solid tumor types. While more traditional oncology drug discovery approaches attempt to generate antibodies against known targets, our approach relies on the human immune system to direct us to unique antibody- target pairs from patients experiencing a clinically meaningful, active immune response against their tumors. These unique antibody- target pairs represent a potentially novel and previously unexplored landscape of oncology targets. We believe the fact that our approach has the potential to deliver novel, previously unexplored oncology targets provides us with a significant competitive advantage over traditional approaches **,** which focus on known targets that many companies are aware of and can pursue. We have utilized our drug discovery approach to identify over 2, 000 distinct human antibodies that bind preferentially to tumor tissue from patients who are not the source of the antibody. Our ~~lead~~ **most advanced** product candidate, ATRC- 101, is a monoclonal antibody with a novel mechanism of action and target derived from an antibody identified using our discovery platform. ATRC- 101 reacts in vitro with a majority of human ovarian, non- small cell lung, colorectal and breast cancer samples from multiple patients. It has demonstrated robust anti- tumor activity as a single agent in multiple preclinical models, including one model in which PD- 1 checkpoint inhibitors typically display limited activity. In 2020, we commenced clinical development of ATRC- 101 with a Phase 1b clinical trial evaluating ATRC- 101 as a monotherapy in patients with select solid tumors which is ongoing, and in 2021 we expanded clinical development by opening a new cohort to evaluate ATRC- 101 in combination with **pembrolizumab,** a PD- 1 checkpoint inhibitor **. In 2022, we began limiting enrollment of subjects in our clinical trials to those with biopsies positive for the target of ATRC- 101 as determined by a CAP- CLIA certified assay. To date, ATRC- 101 continues to be well tolerated, and we have observed longer progression free survival in patients with high target expression in this study. Enrollment in both cohorts is ongoing, and 69 participants have been enrolled and dosed as of December 31, 2022. We expect additional data from both cohorts over the course of 2023, and we expect to make potential Phase 2 development decisions in late 2023** . Our efforts beyond ATRC- 101 are focused on expanding our clinical pipeline by advancing additional product candidates using our ~~large library~~ **discovery platform. We expect the focus** of ~~" hit" antibodies~~ **our pre- clinical development efforts will be on lead- stage oncology programs, including APN- 497444, an ADC against a novel tumor glycan target, and APN- 346958, a CD3 bispecific T- cell engager against an RNA- binding protein target. We continue to aim for one additional IND per year in oncology with our next IND targeted in late 2024. In addition, we continue to develop our platform capabilities and to expand the weaponization technologies we have access to so** that ~~bind preferentially to tumor tissue across patients. To that end, via internal efforts and partnerships,~~ we **can** ~~are both continuing to develop our platform and combining~~ **combine** the novel antibodies that are generated by our platform with **these** antibody ~~"~~ weaponization ~~"~~ technologies **to generate clinical candidates** . ~~Although~~ **In February 2023, we announced the first joint program, mutually selected with Xencor, Inc., or Xencor, for advancement under our** existing ~~cancer therapies~~ **strategic collaboration, combining an Atreca- discovered antibody with Xencor' s XmAb ® bispecific Fc domain and a cytotoxic T- cell binding domain or CD3. The joint program is based on APN- 346958, an Atreca- discovered antibody. APN- 346958 recognizes an RNA- binding protein that is normally sequestered in the nucleus but is mislocalized to the cell surface in tumors. In preclinical studies, the XmAb bispecific antibody engineered against APN- 346958' s target has demonstrated compelling anti- tumor activity and robust immune activation as evidenced by an increase in IFN gamma levels in plasma, and expansion of CD8 T cells in the blood. Atreca and Xencor targeted to name a candidate from the program later in 2023, and Atreca targets an IND submission by early 2025. In April 2022, we provided an update on our preclinical pipeline in oncology, and we announced our next clinical candidate, ATRC- 301. ATRC- 301 is an antibody drug conjugate, or ADC, that selectively targets a novel, membrane- proximal epitope on erythropoietin- producing hepatocellular receptor A2, or EphA2. We initiated IND- enabling studies for ATRC- 301** , including ~~the evolving class of cancer immunotherapeutics~~ **a non- human primate toxicology study in September 2022. In November 2022** , ~~have~~ **we announced that this study revealed safety signals, including bleeding, and as a result, we discontinued the development of ATRC- 301. We continue to evaluate our anti- EphA2 antibodies in multiple weaponized formats.- 8- Beyond oncology, in October 2021, we entered into a licensing agreement with the Bill & Melinda Gates Medical Research Institute or Gates MRI to allow Gates MRI to develop and commercialize MAM01 / ATRC- 501 for the prevention of malaria in GAVI, the Vaccine Alliance, eligible countries located in malaria- endemic regions of the world, to** ~~advanced~~ **advance** ~~significantly over recent years~~ **its charitable purposes. MAM01 / ATRC- 501 is an engineered version of an antibody that we discovered using our platform that targets the circumsporozoite protein of Plasmodium falciparum** , ~~cancer remains~~ **the protozoan that causes the deadliest form of malaria. In November 2022, we announced that an IND for MAM01 / ATRC- 501 is expected to be filed by Gates MRI in the first half of 2023, and that Gates MRI expects to commence clinical development by** the second **half** ~~leading cause~~ of **2023** ~~death in the United States~~ . ~~To address this unmet need~~ **We retain commercial rights in the U. S.** ,

Europe ~~we pursue an~~ **and** ~~open- aperture approach, which relies on the human immune system to direct us to antibody- target pairs~~ **parts of Asia** , **and potential product development opportunities in** ~~the~~ **those** ~~antibodies~~ **regions include prevention** of **malaria for those traveling to malaria endemic regions** ~~which are generated in patients who have adaptive immune system responses against their tumor tissue~~ . Our StrategyOur goal is to become a leading biopharmaceutical company by utilizing our differentiated platform to discover and develop antibody- based therapeutics against novel targets. In pursuit of that strategy, we intend to: Rapidly advance our ~~lead~~ **most advanced** product candidate, ATRC- 101, through clinical trials in multiple types of solid tumors. ATRC- 101 is the first candidate identified using our discovery platform that has advanced into a clinical trial. ATRC- 101 displays broad reactivity across a variety of human solid tumor samples and has demonstrated potent single- agent anti- tumor activity in preclinical models via a unique mechanism of action, which we term Driver Antigen Engagement. In February 2020, we commenced clinical studies to evaluate ATRC- 101 in a monotherapy setting and in September 2021 we opened a new cohort to evaluate ATRC- 101 in combination with a PD- 1 checkpoint inhibitor **. In 2022, we began limiting enrollment of subjects in our clinical trials to those with biopsies positive for the target of ATRC- 101 as determined by a CAP- CLIA certified assay. To date, ATRC- 101 continues to be well tolerated, and we have observed longer progression free survival in patients with high target expression in this study** . We may also evaluate this candidate in combination with other agents in one or more solid tumors in the future. Continue efforts to develop a pipeline of antibody- based product candidates for oncology. While our only product candidate that is currently in clinical development is ATRC- 101, we have utilized our differentiated drug discovery approach to identify over 2, 000 distinct human antibodies targeting human tumors that can potentially provide the basis for additional product candidates. Our ongoing efforts are focused on identifying, analyzing and refining antibodies to generate clinical candidates that take advantage of various mechanisms of action and novel targets. We engineer some of our antibodies into various drug formats, such as ~~antibody- drug conjugates (~~ADCs ~~)~~ and T- cell engaging bispecific antibodies, to drive anti ~~- 8-~~ tumor activity. We intend to build out a proprietary pipeline of product candidates addressing large populations of patients across a range of solid tumors. We currently own worldwide rights to the oncology product candidates derived from our platform. Product candidates developed pursuant to activities undertaken with our collaborators may be subject to certain collaborator rights. Selectively enter into collaborations to enhance and expand our product pipeline as well as our drug development capabilities. We believe that the single agent anti- tumor activity of many of the antibodies discovered using our platform could be enhanced by incorporating potential collaborator technologies. We intend to continue to selectively form collaborations with partners to gain access to complementary technologies and expertise in order to develop product candidates with increased potential for anti- tumor activity. Continue to invest in our discovery platform to further enhance our ability to identify novel antibodies and to generate clinical candidates from our growing hit library. A key pillar of our discovery platform is our proprietary sample repository, which includes over 1, 800 blood- derived samples sourced from over 500 patients representing over 30 different types of solid tumors. We plan to expand the scope of our repository and enhance other portions of our platform in order to maintain our leadership position in the discovery of novel targets ~~in~~ **including hematologic malignancies,** non- autologous tumor tissue and antibodies that bind to them. We also plan to continue to enhance our capabilities to translate these proprietary findings into product candidates such as through further expansion of our target identification capabilities **. Selectively enter into drug discovery partnerships with other life sciences companies to leverage the breadth and scale of our discovery platform. Our discovery platform has been optimized to allow us to operate effectively at scale, and by entering into discovery collaborations with larger pharma and biotech- 9- companies we believe we can generate significant non- dilutive capital via upfront payments, cost reimbursement, milestones and ultimately royalties. Given the significant need in oncology for novel targets, and antibodies that target them as potential therapeutics, leveraging our platform in this manner can be an efficient way to help support the capital requirements of the platform both for our internal use as well as for the needs of our potential partners** . Continue to expand our intellectual property portfolio to further protect our discovery platform and the novel product candidates it may generate. The intellectual property surrounding our platform consists of patents and patent applications, trade secrets and know- how, and we plan to expand our intellectual property as we continue to develop our platform. We also intend to protect our product candidates by pursuing composition- of- matter and method- of- use patents typical for antibody- based therapeutics. Furthermore, as our platform identifies novel antibody- target pairs in which a human antibody may bind to a previously underappreciated target in a useful manner, we plan to pursue additional intellectual property supporting our candidates deriving from their interactions with targets. The Atreca Drug Discovery PlatformWe believe we may be able to address certain key limitations of the current oncology drug discovery paradigm by focusing on the common phenomenon driving clinical responses in cancer immunotherapy — an active human anti- tumor immune response. Our platform allows us to interrogate an active B cell response within an individual cancer patient to identify novel and relevant antibodies and their targets, which may enable us to develop antibody- based product candidates to treat large populations of patients with solid tumors. We believe that the significant time and capital invested in developing, refining and applying our differentiated discovery platform have provided us with significant first- mover advantages and created barriers to entry. For example, establishing our non- interventional clinical studies to obtain patient samples, enabling longitudinal analyses, required approximately 1 to 2 years per study. We have built our bioinformatics expertise in assembling and analyzing our antibodies over nine years of operations. Our hit antibody generation process has been enhanced to deliver hits at a high rate, has already generated over 2, 000 hit antibodies and is supported by a growing intellectual property portfolio. Additionally, our investments of capital and time to build industrialized wet- lab and supporting bioinformatics capacity across our platform, including the time required to identify and hire very qualified personnel, were substantial. Our discovery process begins by gathering blood samples, mostly through company- sponsored non- interventional clinical studies, from cancer patients before, during and after they undergo treatment, which can induce an active anti- tumor immune response. Through this process, we have built a broad repository of over 1, 800 samples from over 500 donors, representing over 30 different solid tumor types. We then examine these samples for rare antibody-

producing B cells called plasmablasts that are normally elevated during an active immune response. We believe that these human immune responses, which often occur over an extended period of time, generate antibodies accessible with our platform that would be difficult to obtain through shorter term, non- human immunization or in vitro strategies. ~~- 9 -~~From the plasmablasts in a particular sample, we then employ a multi- step process to generate a potential product candidate. We start by isolating single plasmablasts and determining the sequences of the co- expressed antibody genes using our proprietary Immune Repertoire Capture ® technology. We analyze these sequences to select antibodies, which we synthesize as recombinant proteins. We then test these antibodies to identify those that bind to tumor tissue from patients who are not the source of the antibody, referred to as non- autologous tumor tissue, preferentially over normal tissue. We then analyze these" hit" antibodies using a number of in vitro and in vivo assays, and often make structural changes to generate leads. A select number of these leads are refined further using protein engineering to enhance their drug- like properties as we identify and characterize their targets in parallel prior to initiating preclinical development and IND- enabling studies. **- 10-** Key Attributes of Our Discovery PlatformWe take an" open- aperture" approach to drug discovery, in which we are not limited by preconceptions of what constitutes a viable antibody or target. We instead allow the human immune system to direct our efforts. We believe this approach provides us access to a broad underexploited antibody and drug target space. Our approach may lead us to antibodies that are unlikely to have arisen via more traditional approaches with targets or epitopes that otherwise may not have been discoverable. We believe our approach and discovery platform provide us with the ability to: Generate antibodies made by the human immune system. Deliver potentially useful antibodies at a high rate and in a scalable fashion. Access a potentially large and underexploited tumor target space. Identify antibodies useful for targeting tumor tissue and their targets. Generate candidates that attack tumor tissue. Develop potential treatments for large populations of patients across multiple tumor types. Pipeline ProgramsATRC- 101ATRC- 101 is a monoclonal antibody derived from an antibody identified using our discovery platform in the active immune response of a patient. We believe that ATRC- 101 may have broad potential as an immunotherapeutic agent in a range of solid tumors. ATRC- 101 reacts in vitro with a majority of human ovarian, non- small cell lung, colorectal and breast cancer samples from multiple patients. It has also demonstrated robust anti- tumor activity as a single agent in multiple preclinical syngeneic tumor models, including one model in which PD- 1 checkpoint inhibitors typically display limited activity. ATRC- 101 has also demonstrated preclinical activity in combination with other immunotherapeutics, including PD- 1 checkpoint inhibitors, and we have demonstrated that certain chemotherapeutic agents can drive expression of the target of ATRC- 101 in a variety of solid tumors. Both the mechanism of action of ATRC- 101, which we refer to as Driver Antigen Engagement, and its target appear unlike those of other anti- tumor antibodies that have been or are currently in clinical development. In histology studies, we did not observe binding above background levels across a range of normal human tissues. Additionally, in repeat- dose safety studies in both mice and non- human primates, we did not observe a safety signal. We have identified the target of ATRC- 101 as a ribonucleoprotein ~~(~~**, or** RNP ~~)~~**,** complex, containing RNA and a number of RNA binding proteins, to which ATRC- 101 binds via a tumor- specific epitope. We believe the mechanism of action of ATRC- 101 involves systemic delivery of an agent targeting a ~~ribonucleoprotein (~~RNP ~~)~~, which causes remodeling of the tumor microenvironment and the destruction of tumor cells via activating first the innate immune system, which then leads to an adaptive immune response that targets tumor tissue. While we believe that this mechanism is novel for a candidate therapeutic in oncology, the mechanism is known to drive immune responses in humans in autoimmune and infectious disease. With our knowledge of the target of ATRC- 101, we believe other targets may exist that are capable of driving such activity when bound by an antibody. We launched an open- label dose escalation monotherapy trial in patients with solid tumors in early 2020 and advanced into monotherapy expansion cohorts in 2021 based on the activity and safety profile we observed in the dose escalation portion of the study. We also opened a new cohort in late 2021 to evaluate ATRC- 101 in combination with a ~~- 10-~~ PD- 1 checkpoint inhibitor and we may explore ATRC- 101 in combination with other agents as well, including with potentially select chemotherapeutics. **In 2022, we began limiting enrollment of subjects in our clinical trials to those with biopsies positive for the target of ATRC- 101 as determined by a CAP- CLIA certified assay. To date, ATRC- 101 continues to be well tolerated, and we have observed longer progression free survival in patients with high target expression in this study.** ATRC- 101 demonstrates the ability of our platform to generate antibody candidates with novel targets and mechanisms of action. We own worldwide rights to ATRC- 101. We have filed multiple U. S. provisional patent applications relating to ATRC- 101 and its variants. In February 2020, we filed a nonprovisional patent application in the U. S., an international **- 11-** patent application under the Patent Cooperation Treaty, and a patent application in Taiwan, each relating to ATRC- 101 and its variants ~~. APN- 122597APN- 122597 is an antibody we identified using our platform that binds to EphA2, a receptor tyrosine kinase (RTK) validated as a known tumor target that is overexpressed in tumor tissue in multiple cancers, but with no approved therapies targeting it. Multiple Fv sequences have been engineered from APN- 122597 that possess decreased developability risk and demonstrate a range of potencies. The novel, extracellular epitope of our anti- EphA2 antibodies is conformational and membrane proximal, with residues that are conserved across human and toxicology species. Our anti- EphA2 antibodies have displayed very limited reactivity in normal tissue cross- reactivity studies, and they display reactivity on tumor tissue that is differentiated from that of clinical candidates developed in the past by others. We have demonstrated potent in vitro and in vivo activities for our antibodies engineered in multiple weaponized formats~~ . ATRC- 501 / MAM01ATRC- 501 is an engineered version of an antibody that we discovered using our platform that targets the circumsporozoite protein of Plasmodium falciparum, the protozoan that causes the deadliest form of malaria. We have entered into a licensing agreement with the ~~Bill & Melinda~~ Gates **MRI** ~~Medical Research Institute~~ for the development and commercialization of MAM01 / ATRC- 501 for the prevention of malaria. Under the agreement, Gates MRI will lead the development of MAM01 / ATRC- 501 and receive commercial rights in GAVI ~~- , the Vaccine Alliance (" GAVI"),~~ eligible countries located in malaria- endemic regions of the world, while Atreca will retain commercial rights in the U. S., Europe and parts of Asia. Potential product development opportunities for Atreca include developing MAM01 / ATRC- 501 for prevention of malaria for those traveling to regions where

the infection may be circulating. **In support of our efforts to improve the potency of MAM01 / ATRC- 501, in October 2022, we entered into the Grant Agreement with the Bill & Melinda Gates Foundation under which we were awarded a grant totaling up to $ 1. 2 million for our continued work on the malaria program.** Weaponization ApproachesThe adaptive immune response against tumor tissue in a patient, from which our platform identifies hit antibodies, generates antibodies that often recognize tumor tissue, but not necessarily those, delivered as a monoclonal, that can cause potent tumor cell killing via binding of these " naked " antibodies to their targets. In order to drive tumor cell killing using tumor- targeting antibodies, such antibodies can be " weaponized " to include additional protein domains or small molecules that engage both immunotherapeutic and other mechanisms. Two such weaponization approaches that we are pursuing are building T cell engagers and ~~antibody- drug conjugates (~~ADCs ~~)~~. T cell engagersOur hit antibodies are defined by their ability to react with non- autologous tumor tissue preferentially over normal adjacent tissue. In principle, therefore, their Fv regions can be used to direct cells of the immune system, such as T cells, to tumor cells. Furthermore, if the T cells can be activated when they are brought to the tumor cell, then tumor cell killing can occur. This" T cell engagement" is a well- validated approach utilized in both approved and clinical stage products. In this approach, tumor- targeting domains derived from antibodies are linked to protein domains that typically bind to a particular protein (e. g., CD3 or CD137 / 4- 1BB) on the surface of T cells, both bringing the T cell to the tumor cell while simultaneously activating it. These antibody- derived biologics are sometimes termed" bispecific", in that they are capable of binding to two different targets: the tumor target and the T cell target. We are pursuing the discovery and development of bispecifics using our proprietary collection of novel tumor- targeting antibodies. To screen for the potential utility of an antibody- target pair, we first use antibody sequence information to create a bispecific T cell engager in one or more formats. We then test this bispecific for activity in vitro ~~- 11-~~ in industry- standard assays for T cell dependent cellular cytotoxicity ~~(~~**, or** TDCC ~~)~~. In these assays, primary human T cells isolated from a patient blood sample are co- incubated with tumor cells. The bispecific, in which the antibody- derived portion from our hit library is known to interact with the tumor cell, is added into the assay, and tumor cell killing is assessed over time. In this assay, a number of our hit antibodies converted into bispecifics display significant tumor cell killing activity. In July 2020, we entered into a Collaboration and License Agreement with Xencor ~~, Inc.,~~ to research, develop and commercialize novel CD3 bispecific antibodies as potential therapeutics in oncology. This agreement calls for a three- year research program in which we will provide antibodies against novel tumor targets through our discovery platform from which Xencor ~~, Inc~~. will engineer XmAb bispecific antibodies that also bind to the CD3 receptor on T cells. In **February 2023, we announced the first joint program, mutually selected with Xencor under our existing strategic collaboration, combining an Atreca- discovered antibody with Xencor' s XmAb ® bispecific Fc domain and a- 12- cytotoxic T- cell binding domain CD3. The joint program is based on APN- 346958, an Atreca- discovered antibody. APN- 346958 recognizes an RNA- binding protein that is normally sequestered in the nucleus but is mislocalized to the cell surface in tumors. In preclinical studies, the XmAb bispecific antibody engineered against APN- 346958' s target has demonstrated compelling anti- tumor activity and robust immune activation as evidenced by an increase in IFN gamma levels in plasma, and expansion of CD8 T cells in the blood. Atreca and Xencor expect to name a candidate from the program later this year and Atreca target an IND submission no later than early 2025. In** the future, we also may selectively pursue additional partnerships to access additional bispecific formats, technologies and know- how in order to discover and develop T cell engagers based on novel antibody- target pairs discovered using our platform. Antibody- drug conjugatesCellular toxins can be conjugated to certain antibodies to generate cytotoxicity against tumor cells expressing their targets. Such ~~antibody- drug conjugates (~~ADCs ~~)~~require antibodies that internalize upon binding to their target. Once antibodies internalize, they also must be delivered to an intracellular compartment suitable for release of the toxin into the cell. We have established in vitro assays to assess first whether our hit antibodies can internalize once they bind to their targets on tumor cells, and if they internalize, then whether they can deliver a toxin to an internal compartment such that the toxin is released to kill the cells. Our second assay measures cytotoxicity as driven by release of toxin bound to an internalized antibody (a cytotoxic payload). In this assay, internalizing hit antibodies are pre- incubated with a second antibody that is both capable of binding the internalizing antibody and has a conjugated cytotoxin. The pre- incubated antibody mixture is then incubated with tumor cells for a period of time, and cell killing is measured. ~~We are~~ **Our ADC strategy includes** pursuing partnerships to access technologies and know- how to discover and develop product candidates with an ADC mechanism of action based on novel antibody- target pairs discovered using our platform. ~~To~~ **In April 2022 we announced we had entered into a License Agreement with Zymeworks Inc., or Zymeworks, which provided a two year research term for us to utilize their ZymeLink ™ technology to develop novel ADCs. In addition, we announced our next clinical candidate, ATRC- 301 which was an ADC utilizing the ZymeLink technology that selectively targets a novel, membrane- proximal epitope on erythropoietin- producing hepatocellular receptor A2, or EphA2. We initiated IND- enabling studies for ATRC- 301, including a non- human primate toxicology study in September 2022. In November 2022, we announced that** this ~~end~~ **study revealed safety signals, including bleeding, and as a result, we discontinued the development of ATRC- 301. As a result** , we are ~~currently working with~~ **only evaluating our anti- EphA2 antibodies in other weaponized formats; however, we continue to evaluate many of our antibodies in** an ~~undisclosed partner under~~ **ADC format, including APN- 497444, which is being evaluated as an ADC against** a **novel tumor glycan target** ~~Material Transfer Agreement (MTA)~~. ManufacturingWe use a third- party manufacturer to produce our antibodies and reagents for use in preclinical assessment of product candidates. We do not have, and we do not currently plan to acquire or develop, the infrastructure, facilities or capabilities to manufacture current Good Manufacturing Practices, or cGMP, bulk drug substance or filled drug product for use in human clinical trials. We intend to continue to utilize third- party manufacturers such as contract development manufacturing organizations, or CDMOs, to produce, test and release cGMP bulk drug substance and drug product for our planned clinical trials. We expect to continue to rely on such third parties to manufacture clinical trial material for the foreseeable future. We currently have a service agreement with a CDMO to develop and manufacture material in support of our Phase 1b clinical

studies, and engaged with additional CDMOs as potential suppliers to ensure sufficient clinical material for our existing trials and provides a path to generate the required manufacturing information that is part of a BLA and initial commercial supplies. Our current and expected future contractual CDMOs have a long, successful track record of manufacturing products for other companies under cGMP compliance and have previously been inspected by regulatory authorities for compliance with cGMP standards. **- 13-** CompetitionWe are aware of a number of companies that are developing antibodies for the treatment of cancer. Many of these companies are well- capitalized and, in contrast to us, have significant clinical, regulatory, and commercial experience, and may include our potential future partners. In addition, these companies compete with us in recruiting ~~- 12-~~ scientific and managerial talent. Our success will partially depend on our ability to obtain, maintain, enforce and defend patents and other intellectual property rights with respect to antibodies that are safer and more effective than competing products. Our commercial opportunity and success will be reduced or eliminated if competing products that are safer, more effective, or less expensive than the antibodies we develop are or become available. We expect to compete with antibody, biologics and other therapeutic platforms and development companies who are also pursuing a similar discovery approach, including, but not limited to, companies such as Adaptive Biotechnologies Corporation, Neurimmune Holding AG, OncoResponse, Inc., **Immunome, Inc.,** and Vir Biotechnology, Inc. In addition, we expect to compete with large, multinational pharmaceutical companies that discover, develop and commercialize antibodies and other therapeutics for use in treating cancer such as AstraZeneca plc, Bristol- Myers Squibb Company, Genentech, Inc. and Merck & Co., Inc. If ATRC- 101 or potential future product candidates are eventually approved, they will compete with a range of treatments that are either in development or currently marketed. For example, we expect that ATRC- 101 and our potential future product candidates may compete against traditional cancer therapies, such as chemotherapy, as well as cell- based treatments for cancer, such as CAR- T therapies. As we and our competitors introduce new products and offerings, and as existing products evolve, we expect to become subject to additional competition. Intellectual PropertyOur success will significantly depend upon our ability to obtain and maintain patent and other intellectual property and proprietary protection for our novel antibody- based immunotherapeutics to treat a range of solid tumors, as well as patent and other intellectual property and proprietary protection for our discovery platform, novel discoveries, and other important technology inventions and know- how. We rely, for example, on patents, trademarks, trade secrets, confidentiality agreements, and invention assignment agreements to protect our intellectual property and proprietary innovations. As set out in ~~the~~ " Risk Factors — Risks Related to Our Intellectual Property," **under Part I, Item 1A of this Form 10- K** our intellectual property and proprietary rights may be challenged, invalidated, circumvented, infringed or misappropriated, or may be insufficient to permit us to preserve or improve our competitive position. Our intellectual property includes a portfolio of in- licensed and Atreca- owned patents and patent applications, relating to our discovery platform and the novel ~~immunotherapeutic~~ product candidates developed using that platform, including compositions of matter, methods of use, methods of treatment, **diagnostics,** and kits. Our lead immunotherapeutic product candidate, ATRC- 101, is a monoclonal antibody with preclinical anti- tumor activity and is a variant of an antibody identified using our discovery platform. As of February 15, ~~2022~~ **2023** , we own: Issued patents in the U. S., China, Japan, Singapore, and Australia **and pending patent applications in the U. S. and in multiple foreign countries relating to our platform- related technology; Issued patent in the U. S** and pending patent applications in the PCT (Patent Cooperation Treaty) ~~, U. S. and in multiple foreign countries relating to our platform- related technology; Pending patent applications in the PCT~~ , U. S. and in multiple foreign countries relating to ATRC- 101 and related variants; Pending patent applications in the **PCT,** U. S. and Europe relating to our anti- malarial therapeutic antibodies; Pending PCT ~~and provisional U. S.~~ patent applications relating to our SARS- CoV- 2 therapeutic antibodies; Pending **PCT, U. S. and** provisional U. S. applications related to our pipeline therapeutic candidates. As of February 15, ~~2022~~ **2023** , we exclusively license from Stanford University relating to our platform- related technology: **- 14-** Pending patent applications in the U. S. and in multiple foreign countries; and Issued patents in the U. S, Europe, Japan, South Korea, Australia, Mexico, New Zealand, Russia, Hong Kong, South Africa, Israel, and Canada. ~~- 13-~~ As of February 15, ~~2022~~ **2023** , we co- own: Pending U. S and European patent applications with collaborators relating to anti- HIV antibodies; and Issued U. S. patent and pending European patent application with a collaborator relating to anti- malarial antibodies. Government RegulationOur business activities are subject to various laws, rules, and regulations of the United States as well as of foreign governments. Compliance with these laws, rules, and regulations has not had a material effect upon our capital expenditures, results of operations, or competitive position, and we do not currently anticipate material capital expenditures for environmental control facilities. However, compliance with existing or future governmental regulations could have a material impact on our business in subsequent periods. **For additional details, please** ~~Refer~~ **refer** to ~~the sections captioned~~ " Risk Factors " under Part I, Item IA **of this Form 10- K** and " Management' s Discussion and Analysis of Financial Condition and Results of Operations " under Part II, Item 7 **of this Form 10- K** for a discussion of these potential impacts. U. S. biological products development processIn the United States, biological products are subject to regulation under the Federal Food, Drug, and Cosmetic Act, and the Public Health Service Act, and other federal, state, local and foreign statutes and regulations. These laws and their corresponding regulations govern, among other things, the research, development, clinical trial, testing, manufacturing, safety, efficacy, labeling, packaging, storage, record keeping, distribution, reporting, advertising and other promotional practices involving biological products. FDA approval must be obtained before the marketing of biological products. The process of obtaining regulatory approvals and the subsequent compliance with appropriate federal, state, local and foreign statutes and regulations require the expenditure of substantial time and financial resources. The process required by the FDA before a biological product may be marketed in the United States generally involves the following: completion of nonclinical laboratory tests and animal studies according to Good Laboratory Practices, or GLP, and applicable requirements for the humane use of laboratory animals or other applicable regulations; submission to the FDA of an application for an ~~investigational new drug, or~~ IND, which must become effective before human clinical trials may begin; approval of the protocol and related documentation by an independent institutional review board, or IRB, or ethics committee at

each clinical trial site before each study may be initiated; performance of adequate and well- controlled human clinical trials according to the FDA' s regulations commonly referred to as Good Clinical Practices, or GCPs, and any additional requirements for the protection of human research subjects and their health information, to establish the safety and efficacy of the proposed biological product for its intended use; submission to the FDA of a Biologics License Application, or BLA, for marketing approval that includes substantive evidence of safety, purity, and potency from results of nonclinical testing and clinical trials; payment of user fees for FDA review of the BLA (unless a fee waiver applies); a determination by the FDA within 60 days of its receipt of a BLA whether or not to accept the filing for review; satisfactory completion of an FDA inspection of the manufacturing facility or facilities where the biological product is produced to assess compliance with current Good Manufacturing Practices, or cGMP, to assure **- 15-** that the facilities, methods and controls are adequate to preserve the biological product' s identity, strength, quality and purity; potential FDA audit of the clinical trial sites or of the ~~Sponsor~~ **sponsor** that generated the data in support of the BLA; and ~~- 14 -~~ FDA review and approval, or licensure, including consideration of the views of any FDA advisory committee, of the BLA. Before testing any biological product candidate in humans, the product candidate enters the preclinical testing stage. Preclinical tests, also referred to as nonclinical studies, include laboratory evaluations of product biological characteristics, chemistry, toxicity and formulation, as well as animal studies to assess the potential safety and activity of the product candidate. The conduct of the preclinical tests must comply with federal regulations and requirements including GLP. The clinical trial sponsor must submit the results of the preclinical tests, together with manufacturing information, analytical data, any available clinical data or literature and a proposed clinical protocol, to the FDA as part of the IND. Some preclinical testing may continue even after the IND is submitted. An IND is a request for authorization from the FDA to ship an unapproved, investigational product in interstate commerce and to administer it to humans and must become effective before clinical trials may begin. The IND automatically becomes effective 30 days after receipt by the FDA, unless the FDA places the clinical trial on a clinical hold within that 30- day time period. In such a case, the IND sponsor and the FDA must resolve any outstanding concerns before the clinical trial can begin. The FDA also may impose clinical holds or partial clinical holds on a biological product candidate at any time before or during clinical trials due to, among other considerations, unreasonable and significant safety risk, inability to assess safety risk, lack of qualified investigators, a misleading or materially incomplete investigator brochure, or study design deficiencies. If the FDA imposes a clinical hold, studies may not recommence without FDA authorization and then only under terms authorized by the FDA. Accordingly, we cannot be sure that submission of an IND will result in the FDA allowing clinical trials to begin, or that, once begun, issues or circumstances will not arise that delay, suspend or terminate such studies. Clinical trials involve the administration of the biological product candidate to healthy volunteers or patients under the supervision of qualified investigators, generally physicians not employed by or under the study sponsor' s control. Clinical trials are conducted under protocols detailing, among other things, the objectives of the clinical trial, dosing procedures, subject selection and exclusion criteria, and the parameters to be used to monitor subject safety, including stopping rules that assure a clinical trial will be stopped if certain adverse events should occur. Each protocol and any amendments to the protocol must be submitted to the FDA as part of the IND. Clinical trials must be conducted and monitored in accordance with the FDA' s regulations comprising the GCP requirements, including the requirement that all research subjects provide informed consent. Further, each clinical trial and its related documentation must be reviewed and approved by an IRB at or servicing each institution at which the clinical trial will be conducted. An IRB is charged with protecting the welfare and rights of study participants and considers such items as whether the risks to individuals participating in the clinical trials are minimized and are reasonable in relation to anticipated benefits. The IRB also approves the form and content of the informed consent that must be signed by each clinical trial subject or his or her legal representative and must monitor the clinical trial until completed. Clinical trials typically are conducted in three sequential phases that may overlap or be combined: Phase 1. The biological product ~~being~~ **is** studied in oncology indications, **and** the investigational product is initially introduced into patients with the target disease or condition. These trials are designed to test the safety, dosage tolerance, absorption, metabolism and distribution of the investigational product in humans, to identify possible side effects associated with increasing doses, and, if possible, to gain early evidence on effectiveness. Phase 2. The biological product is evaluated in a limited patient population to identify possible adverse effects and safety risks, to preliminarily evaluate the efficacy of the product for specific targeted diseases and to determine dosage tolerance, optimal dosage and dosing schedule. Phase 3. Clinical trials are undertaken to further evaluate dosage, clinical efficacy, potency, and safety in an expanded patient population at geographically dispersed clinical trial sites. These randomized clinical trials **- 16-** are intended to establish the overall risk / benefit ratio of the product and provide an adequate basis for approval and physician labeling. ~~- 15 -~~ Post- approval clinical trials, sometimes referred to as Phase 4 clinical trials, may be conducted after initial marketing approval. These clinical trials are used to gain additional experience from the treatment of patients in the intended therapeutic indication, particularly for long- term safety follow- up. During all phases of clinical development, the FDA requires extensive monitoring and auditing of all clinical activities, clinical data, and clinical trial investigators. Annual progress reports detailing the results of the clinical trials must be submitted to the FDA. Written IND safety reports must be promptly submitted to the FDA and the investigators for serious and unexpected adverse events, any findings from other studies, tests in laboratory animals or in vitro testing that suggest a significant risk for human subjects, or any clinically important increase in the rate of a serious suspected adverse reaction over that listed in the protocol or investigator brochure. The sponsor must submit an IND safety report within 15 calendar days after the sponsor determines that the information qualifies for reporting. The sponsor also must notify the FDA of any unexpected fatal or life- threatening suspected adverse reaction within seven calendar days after the sponsor' s initial receipt of the information. Phase 1, Phase 2 and Phase 3 clinical trials may not be completed successfully within any specified period, if at all. The FDA or the sponsor, acting on its own or based on a recommendation from the sponsor' s data safety monitoring board, may suspend a clinical trial at any time on various grounds, including a finding that the research subjects or patients are being exposed to an unacceptable health risk. Similarly, an IRB can suspend or terminate

approval of a clinical trial at its institution if the clinical trial is not being conducted in accordance with the IRB' s requirements or if the biological product has been associated with unexpected serious harm to patients. Concurrent with clinical trials, companies usually complete additional animal studies and also must develop additional information about the physical characteristics of the biological product as well as finalize a process for manufacturing the product in commercial quantities in accordance with cGMP requirements. To help reduce the risk of the introduction of adventitious agents with use of biological products, emphasis is placed on the importance of manufacturing control for products whose attributes cannot be precisely defined. The manufacturing process must be capable of consistently producing quality batches of the product candidate and, among other things, the sponsor must develop methods for testing the identity, strength, quality, potency and purity of the final biological product. Additionally, appropriate packaging must be selected and tested and stability studies must be conducted to demonstrate that the biological product candidate does not undergo unacceptable deterioration over its shelf life. U. S. review and approval processesAfter the completion of clinical trials of a biological product, FDA approval of a BLA must be obtained before commercial marketing of the biological product. The BLA must include results of product development, laboratory and animal studies, human studies, information on the manufacture and composition of the product, proposed labeling and other relevant information. Within 60 days following submission of the application, the FDA reviews a BLA submitted to determine if it is substantially complete before the FDA accepts it for filing. The FDA may refuse to file any BLA that it deems incomplete or not properly reviewable at the time of submission and may request additional information. In this event, the BLA must be resubmitted with the additional information. The resubmitted application also is subject to review before the FDA accepts it for filing. In most cases, the submission of a BLA is subject to a substantial application user fee, although the fee may be waived under certain circumstances. Under the performance goals and policies implemented by the FDA under the Prescription Drug User Fee Act, or PDUFA, for original BLAs, the FDA targets ten months from the filing date in which to complete its initial review of a standard application and respond to the applicant, and six months from the filing date for an application with priority review. The FDA does not always meet its PDUFA goal dates, and the review process is often significantly extended by FDA requests for additional information or clarification. This review in total typically takes twelve months from the date the BLA is submitted to the FDA because the FDA has approximately two months to make a filing decision. The review process and the PDUFA goal date may be extended by three months if the FDA requests or the BLA sponsor otherwise provides additional information or **- 17-** clarification regarding information already provided in the submission within the last three months before the PDUFA goal date. ~~- 16 -~~Once the submission is accepted for filing, the FDA begins an in- depth substantive review of the BLA. The FDA reviews the BLA to determine, among other things, whether the proposed product is safe and potent, or effective, for its intended use, and has an acceptable purity profile, and whether the product is being manufactured in accordance with cGMP to assure and preserve the product' s identity, safety, strength, quality, potency and purity. The FDA may refer applications for novel biological products or biological products that present difficult or novel questions of safety or efficacy to an advisory committee, typically a panel that includes clinicians and other experts, for review, evaluation and a recommendation as to whether the application should be approved and under what conditions. The FDA is not bound by the recommendations of an advisory committee, but it considers such recommendations carefully when making decisions. During the biological product approval process, the FDA also will determine whether a Risk Evaluation and Mitigation Strategy, or REMS, is necessary to assure the safe use of the biological product. If the FDA concludes a REMS is needed, the sponsor of the BLA must submit a proposed REMS; the FDA will not approve the BLA without a REMS, if required. Before approving a BLA, the FDA typically will inspect the facilities at which the product is manufactured. The FDA will not approve the product 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 that the clinical trials were conducted in compliance with IND study requirements and GCP requirements. To assure cGMP and GCP compliance, an applicant must incur significant expenditure of time, money and effort in the areas of training, record keeping, production and quality control. Under the Pediatric Research Equity Act, or PREA, as amended, a BLA or supplement to a BLA for a novel product (e. g., new active ingredient, new indication, etc.) must contain data to assess the safety and effectiveness of the biological product for the claimed indications in all relevant pediatric subpopulations and to support dosing and administration for each pediatric subpopulation for which the product is safe and effective. The FDA may grant deferrals for submission of data or full or partial waivers. Notwithstanding the submission of relevant data and information, the FDA may ultimately decide that the BLA does not satisfy its regulatory criteria for approval and deny approval. Data obtained from clinical trials are not always conclusive and the FDA may interpret data differently than we interpret the same data. If the FDA decides not to approve the BLA in its present form, the FDA will issue a complete response letter that usually describes all of the specific deficiencies in the BLA identified by the FDA. The deficiencies identified may be minor, for example, requiring labeling changes, or major, for example, requiring additional clinical trials. Additionally, the complete response letter may include recommended actions that the applicant might take to place the application in a condition for approval. If a complete response letter is issued, the applicant may either resubmit the BLA, addressing all of the deficiencies identified in the letter, or withdraw the application. If a product receives regulatory approval, the approval may be significantly limited to specific diseases and dosages or the indications for use may otherwise be limited, including to subpopulations of patients, which could restrict the commercial value of the product. Further, the FDA may require that certain contraindications, warnings, precautions or drug- drug interactions be included in the product labeling. The FDA may impose restrictions and conditions on product distribution, prescribing, or dispensing in the form of a REMS, or otherwise limit the scope of any approval. In addition, the FDA may require post marketing clinical trials, sometimes referred to as Phase 4 clinical trials, designed to further assess a biological product' s safety and effectiveness, and testing and surveillance programs to monitor the safety of approved products that have been commercialized. Expedited development and review programsThe FDA has various programs, including fast track designation, breakthrough therapy designation, accelerated

approval and priority review, that are intended to expedite or simplify the process for the development and FDA review of drugs and biologics that are intended for the treatment of serious or life- threatening diseases or conditions. These - 18- programs do not change the standards for approval but may help expedite the development or approval process. To be eligible for fast track designation, new drugs and biological products must be intended to treat a serious or life- threatening condition and demonstrate the potential to address unmet medical needs for the condition. Fast track ~~- 17 -~~designation applies to the combination of the product and the specific indication for which it is being studied. The sponsor of a new drug or biologic may request the FDA to designate the drug or biologic as a fast track product at any time during the clinical development of the product. One benefit of fast track designation, for example, is that the FDA may consider for review sections of the marketing application for a product that has received fast track designation on a rolling basis before the complete application is submitted. Under the FDA' s breakthrough therapy program, products may be eligible for designation as a breakthrough therapy if they are 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 demonstrates that such product may have substantial improvement on one or more clinically significant endpoints over existing therapies. The benefits of breakthrough therapy designation include the same benefits as fast track designation plus the FDA will seek to ensure the sponsor of a breakthrough therapy product receives timely advice and interactive communications to help the sponsor design and conduct a development program as efficiently as possible. Any product is eligible for priority review if it has the potential to provide safe and effective therapy where no satisfactory alternative therapy exists or a significant improvement in the treatment, diagnosis or prevention of a disease compared to marketed products. The FDA will attempt to direct additional resources to the evaluation of an application for a new drug or biological product designated for priority review in an effort to facilitate the review. Under priority review, the FDA' s goal is to review an application in six months once it is filed, compared to ten months for a standard review. Additionally, a product may be eligible for accelerated approval. Drug or biological products studied for their safety and effectiveness in treating serious or life- threatening illnesses and that provide meaningful therapeutic benefit over existing treatments may receive accelerated approval, which means that they may be approved on the basis of adequate and well- controlled clinical trials establishing that the product has an effect on a surrogate endpoint that is reasonably likely to predict a clinical benefit, or on the basis of an effect on an intermediate clinical endpoint other than survival or irreversible morbidity. As a condition of approval, the FDA may require that a sponsor of a drug or biological product receiving accelerated approval perform adequate and well- controlled post-marketing clinical trials. 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. Post- approval requirementsMaintaining substantial compliance with applicable federal, state, and local statutes and regulations requires the expenditure of substantial time and financial resources. Rigorous and extensive FDA regulation of biological products continues after approval, particularly with respect to cGMP. As the manufacturer of our products we are required to comply with applicable requirements in the cGMP regulations, including quality control and quality assurance and maintenance of records and documentation. Other post- approval requirements applicable to biological products include reporting of cGMP deviations that may affect the identity, potency, purity and overall safety of a distributed product, record- keeping requirements, reporting of adverse effects, reporting updated safety and efficacy information, and complying with electronic record and signature requirements. After a BLA is approved, the product also may be subject to official lot release. As part of the manufacturing process, we are required to perform certain tests on each lot of the product before it is released for distribution. If the product is subject to official release by the FDA, we shall submit samples of each lot of product to the FDA together with a release protocol showing a summary of the history of manufacture of the lot and the results of all of the tests performed on the lot. The FDA also may perform certain confirmatory tests on lots of some products, such as viral vaccines, before releasing the lots for distribution. In addition, the FDA conducts laboratory research related to the regulatory standards on the safety, purity, potency, and effectiveness of biological products. We also must comply with the FDA' s advertising and promotion requirements, such as those related to direct- to- consumer advertising, the prohibition on promoting products for uses or in patient populations that are not described - 19- in the product' s approved labeling (known as" off- label use ~~,"~~), industry- sponsored scientific and educational activities, and promotional activities involving the internet. Discovery of previously unknown problems or the failure to comply with the applicable regulatory requirements may result in restrictions on the marketing of a product or withdrawal of the ~~- 18 -~~product from the market as well as possible civil or criminal sanctions. Failure to comply with the applicable U. S. requirements at any time during the product development process, approval process or after approval may subject an applicant or manufacturer to administrative or judicial actions, civil or criminal sanctions and adverse publicity. FDA sanctions could include refusal to approve pending applications, withdrawal of an approval, license revocation, clinical holds, warning or untitled letters, product recalls, product seizures, total or partial suspension of production or distribution, injunctions, fines, refusals of government contracts, mandated corrective advertising or communications with doctors or other stakeholders, debarment, restitution, disgorgement of profits, or civil or criminal penalties. Any agency or judicial enforcement action could have a material adverse effect on us. Biological product manufacturers and other entities involved in the manufacture and distribution of approved biological products are required to register their establishments with the FDA and certain state agencies, and are subject to periodic unannounced inspections by the FDA and certain state agencies for compliance with cGMP and other laws. Accordingly, manufacturers must continue to expend time, money, and effort in the area of production and quality control to maintain cGMP compliance. Discovery of problems with a product after approval may result in restrictions on a product, manufacturer, or holder of an approved BLA, including withdrawal of the product from the market. In addition, changes to the manufacturing process or facility generally require prior FDA approval before being implemented and other types of changes to the approved product, such as adding new indications and additional labeling claims, are also subject to further FDA review and approval. Government regulation outside of the United StatesWhether or not we obtain FDA approval for a product, we must obtain the requisite approvals from regulatory authorities in foreign countries prior to the commencement of clinical trials or

marketing of the product in those countries. Certain countries outside of the United States have a similar process that requires the submission of a clinical trial application, or CTA, much like the IND prior to the commencement of human clinical trials. In the European Union, for example, a CTA must be submitted for each clinical trial to each country' s national health authority and an independent ethics committee, much like the FDA and an IRB, respectively. Once the CTA is approved in accordance with a country' s requirements, the corresponding clinical trial may proceed. The requirements and process governing the conduct of clinical trials, product licensing, pricing and reimbursement vary from country to country. In all cases, the clinical trials must be conducted in accordance with GCP and the applicable regulatory requirements and the ethical principles that have their origin in the Declaration of Helsinki. Other Healthcare LawsIn addition to FDA restrictions on marketing of pharmaceutical and biological products, several other types of state and federal laws have been applied to restrict certain general business and marketing practices in the biopharmaceutical industry in recent years. These laws include, among others, anti-kickback statutes, false claims statutes and other healthcare laws and regulations, some of which are described below. The federal Anti- Kickback Statute prohibits, among other things, knowingly and willfully offering, paying, soliciting or receiving remuneration to induce, or in return for, purchasing, leasing, ordering or arranging for the purchase, lease or order of any healthcare item or service reimbursable under Medicare, Medicaid, or other federally financed healthcare programs. The Patient Protection and Affordable Care Act as amended by the Health Care and Education Reconciliation Act, collectively, the ACA, amended the intent element of the federal statute so that a person or entity no longer needs to have actual knowledge of the statute or specific intent to violate it in order to commit a violation. This statute has been interpreted to apply to arrangements between pharmaceutical manufacturers on the one hand and prescribers, purchasers and formulary managers, among others, on the other. Although there are a number of statutory exceptions and regulatory safe harbors protecting certain common activities from prosecution or other regulatory sanctions, the exceptions and safe harbors are drawn narrowly, and practices that involve remuneration **- 20-** intended to induce prescribing, purchases or recommendations may be subject to scrutiny if they do not qualify for an exception or safe harbor. ~~- 19-~~Federal civil and criminal false claims laws, including the federal civil False Claims Act, prohibit any person or entity from knowingly presenting, or causing to be presented, a false claim for payment to the federal government, or knowingly making, or causing to be made, a false statement to have a false claim paid. This includes claims made to programs where the federal government reimburses, such as Medicare and Medicaid, as well as programs where the federal government is a direct purchaser, such as when it purchases off the Federal Supply Schedule. Recently, several pharmaceutical and other healthcare companies have been prosecuted under these laws for allegedly inflating drug prices they report to pricing services, which in turn were used by the government to set Medicare and Medicaid reimbursement rates, and for allegedly providing free product to customers with the expectation that the customers would bill federal programs for the product. In addition, certain marketing practices, including off- label promotion, may also violate false claims laws. Additionally, the ACA amended the federal Anti- Kickback Statute such that a violation of that statute can serve as a basis for liability under the federal civil False Claims Act. Most states also have statutes or regulations similar to the federal Anti-Kickback Statute and civil False Claims Act, which apply to items and services reimbursed under Medicaid and other state programs, or, in several states, apply regardless of the payor. Other federal statutes pertaining to healthcare fraud and abuse include the civil monetary penalties statute, which prohibits, among other things, the offer or payment of remuneration to a Medicaid or Medicare beneficiary that the offeror or payor knows or should know is likely to influence the beneficiary to order a receive a reimbursable item or service from a particular supplier, and the additional federal criminal statutes created by the Health Insurance Portability and Accountability Act of 1996, or HIPAA, which prohibits, among other things, knowingly and willfully executing or attempting to execute a scheme to defraud any healthcare benefit program or obtain by means of false or fraudulent pretenses, representations or promises any money or property owned by or under the control of any healthcare benefit program in connection with the delivery of or payment for healthcare benefits, items or services. HIPAA, as amended by the Health Information Technology for Economic and Clinical Health Act of 2009, or HITECH, and their respective implementing regulations, including the Final Omnibus Rule published on January 25, 2013, impose obligations on certain healthcare providers, health plans, and healthcare clearinghouses, known as covered entities, as well as their business associates and their covered subcontractors that perform certain services involving the storage, use or disclosure of individually identifiable health information, including mandatory contractual terms, with respect to safeguarding the privacy, security, and transmission of individually identifiable health information, and require notification to affected individuals and regulatory authorities of certain breaches of security of individually identifiable health information. HITECH increased the civil and criminal penalties that may be imposed against covered entities, business associates and possibly other persons, and gave state attorneys general new authority to file civil actions for damages or injunctions in federal courts to enforce the federal HIPAA laws and seek attorneys' fees and costs associated with pursuing federal civil actions. In addition, many state laws govern the privacy and security of health information in certain circumstances, many of which differ from each other in significant ways and may not have the same effect, and often are not pre- empted by HIPAA. Further, pursuant to the federal Physician Payments Sunshine Act, created as part of the ACA, certain manufacturers of prescription drugs are required to collect and report annually to the Centers for Medicare & Medicaid Services, or CMS, information on certain payments or transfers of value to physicians (defined to include doctors, dentists, optometrists, podiatrists and chiropractors), other healthcare professionals (such as physician assistants and nurse practitioners), and teaching hospitals, as well as investment interests held by physicians and their immediate family members. Failure to submit required information may result in civil monetary penalties. In addition, several states now require biopharmaceutical manufacturers to report certain expenses relating to the marketing and promotion of drug products and to report gifts and payments to individual healthcare practitioners in these states. Other states prohibit various marketing- related activities, such as the provision of certain kinds of gifts or meals. Still other states require the posting of information relating to clinical studies and their outcomes. Some states require the reporting of certain drug pricing information, including information pertaining to and justifying price increases, or prohibit prescription drug price gouging. In addition, some states require

pharmaceutical companies to **- 21-** implement compliance programs or marketing codes. Certain states and local jurisdictions also require the registration of pharmaceutical sales representatives. ~~- 20-~~ Efforts to ensure that business arrangements with third parties comply with applicable healthcare laws and regulations involve substantial costs. If a biopharmaceutical manufacturer' s operations are found to be in violation of any such requirements, it may be subject to significant penalties, including civil, criminal and administrative penalties, damages, fines, disgorgement, imprisonment, the curtailment or restructuring of its operations, loss of eligibility to obtain approvals from the FDA, exclusion from participation in government contracting, healthcare reimbursement or other federal or state government healthcare programs, including Medicare and Medicaid, integrity oversight and reporting obligations, and reputational harm. Although effective compliance programs can mitigate the risk of investigation and prosecution for violations of these laws, these risks cannot be entirely eliminated. Any action for an alleged or suspected violation can cause a drug company to incur significant legal expenses and divert management' s attention from the operation of the business, even if such action is successfully defended. U. S. healthcare reformIn the United States there have been, and continue to be, proposals by the federal government, state governments, regulators and third party payors to control or manage the increased costs of healthcare and, more generally, to reform the U. S. healthcare system. The biopharmaceutical industry has been a particular focus of these efforts and has been significantly affected by major legislative initiatives For example, in March 2010, the ACA was enacted, which intended to broaden access to health insurance, reduce or constrain the growth of healthcare spending, enhance remedies against fraud and abuse, add new transparency requirements for the healthcare and health insurance industries, impose new taxes and fees on the health industry and impose additional health policy reforms, substantially changed the way healthcare is financed by both governmental and private insurers, and significantly impacts the U. S. pharmaceutical industry. There have been executive and Congressional efforts to modify, repeal, or otherwise invalidate all, or certain provisions of, the ACA. In June 2021, the U. S. Supreme Court dismissed a challenge on procedural grounds that argued the ACA is unconstitutional in its entirety because the " individual mandate " was repealed by Congress. ~~Thus~~ **On August 16** , **2022** ~~the ACA will remain in effect in its current form. Further, prior to the U. S. Supreme Court ruling~~ , President Biden ~~issued an executive order that initiated a special enrollment period~~ **signed the Inflation Reduction Act of 2022, or IRA, into law, which among other things, extends enhanced subsidies** for ~~obtaining~~ **individuals purchasing** health insurance coverage **in ACA marketplaces** through **plan year 2025. The IRA also eliminates** ~~the ACA marketplace, and instructed certain governmental agencies to review and reconsider their~~ -- **the** ~~existing policies~~ **coverage gap known as the" donut hole" under the Medicare Part D program beginning in 2025 by significantly lowering the beneficiary maximum out- of- pocket cost** and ~~rules that limit access to healthcare~~ **creating a new manufacturer discount program** . The ACA may be subject to additional judicial or Congressional challenges in the future. It is unclear how any such challenges and the healthcare reform measures of the Biden administration will impact the ACA. Recently there has been heightened governmental scrutiny over the manner in which biopharmaceutical manufacturers set prices for their marketed products, which has resulted in several Congressional inquiries, Presidential executive orders, and proposed and enacted federal and state legislation designed to, among other things, bring more transparency to product pricing, review the relationship between pricing and manufacturer patient programs, and reform government program reimbursement methodologies for drug products. At the federal level, in July 2021, the Biden administration released an executive order, " Promoting Competition in the American Economy, " with multiple provisions aimed at prescription drugs. In response to Biden' s executive order, in September 2021, **the Department of Health and Human Services, or** HHS **,** released a Comprehensive Plan for Addressing High Drug Prices that outlines principles for drug pricing reform and sets out a variety of potential legislative policies that Congress could pursue to advance these principles. ~~No legislation or~~ **Further, the IRA, among other things (i) directs HHS to negotiate the price of certain high- expenditure, single- source drugs and biologics covered under Medicare and (ii) imposes rebates under Medicare Part B and Medicare Part D to penalize price increases that outpace inflation. These provisions will take effect progressively starting in fiscal year 2023, although they may be subject to legal challenges. Additionally, the Biden** ~~administrative~~ **administration released an** ~~actions have been finalized to implement these principles. In addition~~ **additional executive order on October 14** , ~~Congress is considering~~ **2022, directing HHS to report on how the Center for Medicare and Medicaid Innovation can be further leveraged to test new models for lowering** drug **costs for Medicare and Medicaid beneficiaries** ~~pricing as part of other reform initiatives~~ . At the state level, legislatures are increasingly passing legislation and implementing regulations designed to control pharmaceutical and biological product pricing, including price or patient reimbursement constraints, discounts, **- 22-** 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 governmental action is taken in response to the ongoing COVID- 19 pandemic~~ . Coverage, pricing and reimbursementSignificant uncertainty exists as to the coverage and reimbursement status of biopharmaceutical products approved by the FDA and other government authorities. Sales of any approved products will depend, in part, on the extent to which the costs of the products will be covered by third- party payors, including government health programs in the United States such as Medicare and Medicaid, commercial health insurers and managed care organizations. The ~~- 21-~~ process for determining whether a payor will provide coverage for a product may be separate from the process for setting the price or reimbursement rate that the payor will pay for the product once coverage is approved. Third- party payors are increasingly challenging the prices charged, examining the medical necessity and reviewing the cost- effectiveness of medical products and services and imposing controls to manage costs. Third- party payors may also limit coverage to specific products on an approved list, or formulary, which might not include all of the approved products for a particular indication. In the United States, no uniform policy of coverage and reimbursement for products exists among third- party payors. Third- party payors often rely upon Medicare coverage policy and payment limitations in setting their reimbursement rates, but also have their own methods and approval process apart from Medicare determinations. Therefore, coverage and reimbursement for products in the United States can differ significantly from payor to payor. In order to secure coverage and reimbursement for any biological

product that is approved for sale, a biopharmaceutical manufacturer may need to conduct expensive pharmacoeconomic studies in order to demonstrate the medical necessity and cost- effectiveness of the product. A payor' s decision to provide coverage for a drug or biological product does not imply that an adequate reimbursement rate will be approved. Third- party reimbursement may not be sufficient to maintain price levels high enough to realize an appropriate return on investment in product development. ~~.~~ Similar challenges to obtaining coverage and reimbursement for our product candidates, if approved, will apply to our companion diagnostics. The containment of healthcare costs also has become a priority of federal, state and foreign governments and the prices of drugs have been a focus in this effort. Governments have shown significant interest in implementing cost- containment programs, including price controls, restrictions on reimbursement and requirements for substitution of generic products. Adoption of price controls and cost- containment measures, and adoption of more restrictive policies in jurisdictions with existing controls and measures, could further limit a company' s revenue generated from the sale of any approved drug or biological product. Coverage policies and third- party reimbursement rates may change at any time. Even if favorable coverage and reimbursement status is attained for one or more drug or biological products for which a company or its collaborators receive marketing approval, less favorable coverage policies and reimbursement rates may be implemented in the future. Human Capital ResourcesWe believe our culture and commitment to our employees provides unique value to our company and our stockholders. We foster a collaborative, healthy, safe, and inclusive workplace for our employees. As of December 31, ~~2021~~ **2022** , we had ~~134~~ **90** full- time employees, ~~98~~ **61** of whom were primarily engaged in research and development activities and ~~42~~ **26** of whom had an M. D. or Ph. D. degree. None of our employees are represented by a labor union or covered by a collective bargaining agreement. Values We believe our values of " Patient- Driven Science, " " Integrity, " " Respect, " " Collaboration, " " Transparency, " and " Fun " are the foundation for our success. These values create a culture that focuses on science and patients and promotes trust, teamwork, and celebration. Communication and ~~Engagement~~We ~~-~~ **Engagement- 23- We** encourage communication and engagement so that employees can hear directly from leadership and have the opportunity to ask questions, make suggestions, and provide input. We communicate frequently and transparently through a variety of methods, including video and written communications, company- wide town hall meetings, employee surveys and our company intranet. We proactively acknowledge individual and team contributions through various rewards and award programs. We believe our communication and engagement efforts keep employees informed and motivated. We also maintain an ethics and compliance hotline that is available to all of our employees to report (anonymously if desired) any matter of concern. ~~- 22-~~ Diversity and Inclusion We value our employees' diversity – from gender, race and sexuality to thoughts, interests, languages and beliefs. We encourage employees to leverage their unique backgrounds and varied life experiences to build a strong company, and we actively seek employee participation in our diversity and inclusion initiatives. Our commitment to diversity and inclusion has led us to expand our efforts, both through internal programs and external contributions, to increase diversity within our organization and support equality outside our organization. Talent Acquisition We believe that successful talent acquisition starts with hiring the right people. We utilize innovative tools and structured processes intended to convey what makes our company unique as an employer to better attract diverse and highly qualified candidates. Our strong branding and sourcing efforts allow us to hire the best talent. Health and WellnessWe are committed to the health, safety, and wellness of our employees. We offer a comprehensive compensation and benefits program aimed at the health, work / life balance, and financial needs of our employees, including market- competitive pay, broad- based stock grants and bonuses, healthcare benefits, retirement savings plans, including a 401k matching contribution, paid time off and paid family leave, flexible work schedules, on- site health and fitness centers, free preventative care including flu vaccinations, and an Employee Assistance Program and other mental health services. We also sponsor a wellness program designed to enhance physical, financial, and mental wellbeing for all our employees. COVID- 19 ResponseIn response to the ongoing COVID- 19 pandemic, we ~~quickly~~ **have** implemented and maintained health and safety standards and protocols for our onsite employees and enhanced our employee benefit programs. ~~The majority of our non- laboratory~~ **We have created a flexible work policy to enable** employees **to work** ~~have been working~~ remotely **and** ~~since March 2020. We~~ expanded our ergonomic assessment program to support the safety and comfort of ~~our~~ remote ~~workforce~~ **work** . ~~Our~~ **We require our** onsite employees ~~are provided with daily personal protective equipment, enhanced cleaning supplies, and are required~~ to adhere to our COVID- 19 safety protocols as recommended by federal, state and local guidance, ~~including wearing masks at all times on site, social distancing, limiting density, taking temperatures,~~ and ~~reporting and documenting exposures. In addition,~~ we ~~have covered~~ ~~-~~ **cover** the cost of all COVID- 19 testing for onsite employees **. In addition** , **we have** enhanced our mental health offerings, supported dynamic work schedules for working parents, ~~sponsored productivity and school age parenting workshops,~~ and bolstered **employees'** ability to use individual sick time. Corporate ~~Information~~Our **InformationWe were incorporated under the laws of the state of Delaware in June 2010. Our** principal executive offices are located at 835 Industrial Road Suite 400, San Carlos, CA 94070. Our telephone number is (650) 595- 2595. Our website address is www. atreca. com. Information contained on, or that can be accessed through, our website is not incorporated by reference into this Form 10- K, and you should not consider information on our website to be part of this Form 10- K. The Atreca design logo," Atreca" and our other registered or common law trademarks, service marks, or trade names appearing in this Form 10- K are the property of Atreca, Inc. Other trade names, trademarks and service marks **- 24-** used in this Form 10- K are the property of their respective owners. Solely for convenience, trademarks and trade names referred to in this Form 10- K may appear without the ® or ™ symbols. Available InformationOur Annual Report on Form 10- K, Quarterly Reports on Form 10- Q, Current Reports on Form 8- K, and amendments to reports filed pursuant to Sections 13 (a) and 15 (d) of the Exchange Act are filed with the U. S. Securities ~~- 23-~~ and Exchange Commission, or SEC. Such reports and other information filed by us with the SEC are available free of charge on our website at ir. atreca. com when such reports are available on the SEC' s website. The SEC maintains an internet site that contains reports, proxy and information statements and other information regarding issuers that file electronically with the SEC at www. sec. gov. The information contained on the websites referenced in this Form 10- K is not incorporated by reference into this filing. Further, our references

to website URLs are intended to be inactive textual references only.- ~~24~~ **25** - Item 1A. Risk FactorsOur business and investing in our Class A common stock involves a high degree of risk. You should consider and read carefully all of the risks and uncertainties described below, as well as other information included in this Form 10- K, including our ~~consolidated~~ financial statements and related notes and " Management' s Discussion and Analysis of Financial Condition and Results of Operations " under Part II, Item 7 **of this 10- K** before deciding whether to invest in our Class A common stock. The risks described below are not the only ones facing us. The occurrence of any of the following risks or additional risks and uncertainties not presently known to us or that we currently believe to be immaterial could materially and adversely affect our business, financial condition, results of operations, prospects and stock price. In such case, the market price of our Class A common stock could decline, and you may lose all or part of your original investment. Additional risks and uncertainties not presently known to us or that we currently deem immaterial may also impair our business operations and the market price of our common stock. This Form 10- K also contains forward- looking statements and estimates that involve risks and uncertainties. Our actual results could differ materially from those anticipated in the forward- looking statements as a result of specific factors, including the risks and uncertainties described below.- ~~25~~ **26** - Risks Related to Our BusinessWe are a clinical- stage biopharmaceutical company with a history of losses. We expect to continue to incur significant losses for the foreseeable future and may never achieve or maintain profitability, which could result in a decline in the market value of our Class A common stock. We are a clinical- stage biopharmaceutical company with a history of losses. Since our inception, we have devoted substantially all of our resources to research and development, raising capital, building our management team and building our intellectual property portfolio, and we have incurred significant operating losses. As of December 31, **2022, and** 2021 ~~, and December 31, 2020~~, we had accumulated deficits of $ **456. 9 million and $** 359. 8 ~~million and $ 250. 4~~ million, respectively. For the years ended December 31, **2022 and** 2021 ~~and 2020~~, our net losses were $ **97. 2 million and $** 109 ~~. 3 million and $ 86~~. 3 million, respectively. Substantially all of our losses have resulted from expenses incurred in connection with our research and development programs and from general and administrative costs associated with our operations. To date, we have not generated any revenue from product sales, and we have not sought or obtained regulatory approval for any product candidate. Furthermore, we do not expect to generate any revenue from product sales for the foreseeable future, and we expect to continue to incur significant operating losses for the foreseeable future due to the cost of research and development, preclinical studies and clinical trials and the regulatory approval process for our current and potential future product candidates. We expect our net losses to increase substantially as we continue clinical development of our ~~lead~~ **most advanced** product candidate, ATRC- 101 **, and continue to expand our pipeline** . However, the amount of our future losses is uncertain. Our ability to achieve or sustain profitability, if ever, will depend on, among other things, successfully developing product candidates, obtaining regulatory approvals to market and commercialize product candidates, manufacturing any approved products on commercially reasonable terms, entering into potential future partnerships, establishing a sales and marketing organization or suitable third- party alternatives for any approved product and raising sufficient funds to finance business activities. If we, or our potential future partners, are unable to commercialize one or more of our product candidates, or if sales revenue from any product candidate that receives approval is insufficient, we will not achieve or sustain profitability, which could have a material and adverse effect on our business, financial condition, results of operations and prospects. Any predictions you make about our future success or viability may not be as accurate as they could be if we had a history of successfully developing and commercializing pharmaceutical products. **Our ability to continue as a going concern requires that we obtain sufficient funding to finance our operations, which may not be available on acceptable terms, or at all. A failure to obtain this necessary capital when needed could force us to delay, limit, reduce or terminate our drug development efforts, which may materially and adversely affect our business, financial condition, results of operations and prospects. In accordance with the accounting guidance related to the presentation of financial statements, when preparing financial statements for each annual and interim reporting period, our management evaluates whether there are conditions or events that, when considered in the aggregate, raise substantial doubt about the Company' s ability to continue as a going concern within one year after the date that the financial statements are issued. In making its assessment, our management considered the Company' s current financial condition and liquidity sources. Our management expects to generate operating losses and negative operating cash flows in the future and our management believes the need for additional funding to support our planned operations raise substantial doubt regarding our ability to continue as a going concern for a period of one year from the date of issuance of the consolidated financial statements in this Form 10- K. To mitigate our funding needs, we have taken, and plan to continue to take, proactive measures to enhance our liquidity position and provide additional financial flexibility, including, among other things, equity financing in fiscal year 2023 and reduced spending in fiscal years 2023 and 2024. While our management believes that our plan to address and alleviate the substantial doubt about our ability to continue as a going concern is probable of being achieved, and our consolidated financial statements have accordingly been prepared assuming that we will continue as a going concern, there can be no assurance the necessary financing will be available on terms acceptable to us, or at all. Our plans are subject to market conditions and reliance on third parties, and there is no assurance that effective implementation of our plans will result in the necessary funding to continue as a going concern beyond one year from the date of issuance of- 27- the consolidated financial statements in this Form 10- K. For additional details, please refer to Note 2, Summary of Significant Accounting Policies, in our Notes to Consolidated Financial Statements included in Part II, Item 8 of this Form 10- K and " Management' s Discussion and Analysis of Financial Condition and Results of Operations — Liquidity and Capital Resources; Plan of Operations " under Part II, Item 7 of this Form 10- K. If we are unable to obtain adequate additional capital resources to fund our liquidity needs, we will not be able to continue to operate our business pursuant to our current business plan, which would require us to further modify our operations to reduce spending to a sustainable level by, among other things, delaying, scaling back or eliminating some or all of our ongoing or planned investments in corporate infrastructure, including our drug**

development, regulatory, manufacturing, and research and development efforts, including extensive preclinical and clinical testing, and other activities or we may be forced to discontinue our operations entirely and / or liquidate our assets, in which case it is likely that equity investors would lose most or all of their investment. The substantial doubt about our ability to continue as a going concern may also affect the price of our Class A common stock, negatively impact relationships with third parties with whom we do business, including vendors, lenders and employees, prevent us from identifying, hiring or retaining the key personnel that may be necessary to operate and grow our business and limit our ability to raise additional capital. Any of the foregoing factors could have a material adverse effect on our business, financial condition, results of operations and prospects. ATRC- 101 is in clinical trials. It may fail in development or suffer delays that materially and adversely affect its commercial viability. In February 2020, we initiated a Phase 1b clinical trial for ATRC- 101 in patients with solid tumors **, and in 2021 we expanded clinical development by opening a new cohort to evaluate ATRC- 101 in combination with pembrolizumab, a PD- 1 checkpoint inhibitor** . We have no products on the market or that have gained regulatory approval. Other than ATRC- 101, we currently have no product candidates and none of our potential future product candidates have ever been tested in humans. Our ability to achieve and sustain profitability depends on obtaining regulatory approvals for and successfully commercializing product candidates, either alone or with partners. Before obtaining regulatory approval for the commercial distribution of product candidates, we or a partner must conduct extensive preclinical studies, followed by clinical trials to demonstrate the safety and efficacy of our product candidates in humans. We cannot be certain of the timely completion or outcome of our preclinical studies **,** and **we** cannot predict if the FDA or other regulatory authorities will accept our proposed clinical programs or if the outcome of our preclinical studies will ultimately support the further development of our preclinical programs. As a result, we cannot be sure that we will be able to submit INDs or similar applications for our preclinical programs on the timelines we expect, if at all, and we cannot be sure that submission of INDs or similar applications will result in the FDA or other regulatory authorities allowing clinical trials to begin. In **response to** ~~addition, in March 2020, a disease caused by a novel strain of the coronavirus, or~~ COVID- 19, ~~was characterized as a pandemic by the World Health Organization. In response to COVID- 19,~~ the FDA ~~announced its intention to postpone most foreign inspections~~ and ~~non- prioritized domestic inspections of manufacturing facilities and products, and regulatory authorities outside the United States may adopt similar restrictions or other policy measures in response to COVID- 19. If global health concerns continue to prevent the FDA or~~ other regulatory authorities **have been periodically prevented** from ~~- 26-~~ conducting their regular inspections, reviews, or other regulatory activities, **and if this continues to occur** it could significantly impact the ability of the FDA or other regulatory authorities to timely review and process our regulatory submissions, which could have an adverse effect on the timing and progress of our current or future clinical trials and our business. ATRC- 101 is in early clinical development, and we are subject to the risks of failure inherent in the development of product candidates based on novel approaches, targets and mechanisms of action. Accordingly, you should consider our prospects in light of the costs, uncertainties, delays and difficulties frequently encountered by clinical stage biopharmaceutical companies such as ours. We may not have the financial resources to continue development of, or to enter into new collaborations for, ATRC- 101 or any potential future product candidates. This may be exacerbated if we experience any issues that delay or prevent regulatory approval of, or our ability to commercialize, ATRC- 101 or any potential future product candidate, such as: **- 28-** negative or inconclusive results from our **preclinical studies or** clinical trials **,** or the **preclinical studies or** clinical trials of others for product candidates similar to ours, leading to a decision or requirement to conduct additional preclinical studies or clinical trials or abandon a program; product- related side effects experienced by participants in our clinical trials or by individuals using drugs or therapeutic antibodies similar to ours; delays in submitting IND applications or comparable foreign applications, or delays or failure in obtaining the necessary approvals from regulators to commence a clinical trial, or a suspension or termination of a clinical trial once commenced; conditions imposed by the FDA, or other regulatory authorities regarding the scope or design of our clinical trials; delays in enrolling research subjects in clinical trials; high drop- out rates of research subjects; inadequate supply or quality of product candidate components or materials or other supplies necessary for the conduct of our clinical trials; greater- than- anticipated clinical trial costs; poor effectiveness of our product candidates during clinical trials; unfavorable FDA or other regulatory agency inspection and review of a clinical trial or manufacture site; failure of our third- party contractors or investigators to comply with regulatory requirements or otherwise meet their contractual obligations in a timely manner, or at all; delays and changes in regulatory requirements, policies and guidelines; or the FDA or other regulatory agencies interpreting our data differently than we do. As a result of the ~~ongoing~~ COVID- 19 pandemic, we have experienced, and may experience in the future, disruptions or delays in our clinical trial for ATRC- 101. ~~These disruptions or delays may affect, among other things, enrolling patients, initiating sites, recruiting clinical site investigators and site personnel, achieving patient compliance with clinical trial protocols if COVID- 19 containment measures or other limitations or restrictions impede patient movement or interrupt healthcare services, monitoring clinical trial sites due to travel restrictions related to COVID- 19, and collecting sufficient clinical data.~~ For example, we **have** experienced delays in initiating sites, achieving patient compliance with study- related procedures, and enrolling and treating patients. We have worked, and continue to work, closely with our current and potential clinical trial sites to mitigate any disruptions or delays. However, COVID- 19 may continue to **have a negative** impact **on** our clinical trial activities for ATRC- 101, but **we cannot predict the full extent of such impact** at this time ~~we cannot predict the full extent of this impact~~ . Further, we and our potential future partners may never receive approval to market and commercialize any product candidate. Even if we or a potential future partner obtains regulatory approval, the approval may be for targets, disease indications or patient populations that are not as broad as we intended or desired or may require labeling that includes significant use or distribution restrictions or safety warnings. We or a potential future partner may be subject to post- marketing testing requirements to maintain regulatory approval. ~~- 27-~~ ATRC- 101 may not demonstrate the combination of safety and efficacy necessary to become approvable or commercially viable. ~~We may ultimately discover that~~ ATRC- 101 ~~does~~ **may** not possess certain properties that we currently

believe are helpful for therapeutic effectiveness and safety. For example, although ATRC- 101 has exhibited encouraging results in **certain** animal studies, including anti- tumor activity and safety, it may not demonstrate the same properties in humans and may interact with human biological systems in unforeseen, ineffective or harmful ways. As a result, we may never succeed in developing a marketable product based on ATRC- 101. If ATRC- 101 or any of our potential future product candidates prove to be ineffective, unsafe or commercially unviable, our entire pipeline could have little, if any, value, which could require us to change our focus and approach to antibody discovery and development, which would have a material and adverse effect on our business, financial condition, results of operations and prospects. The COVID- 19 pandemic **may** ~~continues~~ **continue** to impact our business ~~,~~ and could have a material adverse impact on our business and our operations ~~, including at our laboratories and office locations and at our clinical trial sites~~, as well as the business and operations of our manufacturers, CROs or other third parties with whom we conduct business. The COVID- 19 pandemic **may** ~~continues~~ **continue** to impact our business ~~,~~ and could have a material adverse impact on our business and operations ~~, and~~ **as well as** the business and operations of our manufacturers, CROs and other third parties with whom we conduct our business. ~~Following~~ **We continue to monitor the situation and take appropriate actions as recommended- 29- by federal, state, and local guidance. We are unable to accurately predict the full impact that the** COVID- 19 **pandemic will have** ~~guidance from federal, state and local authorities, we transitioned to a fully remote working environment in March 2020 and partially re- opened in June 2020 for lab- based personnel and certain essential personnel only. In July 2021, additional personnel resumed working~~ on ~~site~~ **our business, operations and financial condition**, but **it** ~~the majority of our personnel are still working remotely. All onsite personnel are required to adhere to our COVID- 19 safety protocols for their protection. We do not know if, or when, we may have to close our laboratories and office locations again. COVID- 19~~ could have a material adverse impact on our business **,** ~~and our~~ operations **, preclinical and clinical studies**, including: disruptions or delays in our preclinical studies or our clinical trial for ATRC- 101, including enrolling patients, initiating sites, recruiting clinical site investigators and site personnel, achieving patient compliance with clinical trial protocols if containment measures or other limitations or restrictions impede patient movement or interrupt healthcare services, monitoring clinical trial sites due to travel restrictions related to COVID- 19, and collecting sufficient clinical data ~~;~~ disruptions or delays in our manufacturing activities, including our supply of preclinical, clinical, and commercial materials from existing third- party manufacturers and our ability to engage new third- party manufacturers; disruptions or delays in our existing and potential future collaboration activities, both internally and externally at collaborators; disruptions or delays in our efforts to use and expand our discovery platform, both internally and externally with third parties, including decreased productivity of our onsite lab- based personnel due to restrictions related to COVID- 19 at our laboratory and office locations and delays in receiving necessary supplies and other materials; delays in activities of the FDA or other regulatory authorities related to our clinical trial for ATRC- 101 or any future clinical trials; diversion of healthcare resources away from the conduct of clinical trials, including the diversion of hospitals serving as our clinical trial sites and hospital staff supporting the conduct of clinical trials; changes in laws or regulations as a result of COVID- 19 that may require us to change the ways in which our clinical trial is conducted and incur unexpected costs, or require us to discontinue the clinical trial; interruption in global commercial transportation and shipping that may affect the transport of clinical trial materials; delays in necessary interactions with local regulators, ethics committees and other agencies and contractors due to limitations in employee resources or forced furlough of government personnel; delays and decreased productivity as a result of ~~the majority of our personnel working remotely or as a result of~~ our onsite personnel complying with restrictions related to COVID- 19 at our laboratory and office locations, including our COVID- 19 onsite safety protocols ~~;~~ **, and** the potential closure of our laboratories and offices again due to future COVID- 19 outbreaks where our laboratories and offices are located; ~~- 28-~~ disruptions, delays and decreased productivity in the event that ~~any of~~ our personnel contract COVID- 19, including as a result of the full reopening of our laboratories and office locations and the return of personnel to these locations, which could necessitate quarantining and contact tracing efforts; disruptions or delays in using and expanding our discovery platform; and delays or difficulties in our ability to access capital. ~~In~~ **For example, in** our clinical trial for ATRC- 101, we experienced delays ~~in initiating sites, achieving patient compliance with study-~~ related **to COVID- 19** ~~procedures, and enrolling patients~~ in ~~the second and third quarters of~~ 2020 ~~due to COVID- 19~~ , **2021** and **2022, and** we **may continue to** ~~experienced~~ **experience such** delays **in 2023, primarily** in enrolling and treating patients ~~at a few sites in 2021~~ due to COVID- 19 ~~infections~~ **protocols** and **site** staff shortages. **To the extent the** COVID- 19 ~~may continue to impact our clinical trial activities for ATRC- 101, but we cannot predict the full extent of this impact at this time. The spread of COVID- 19, which has caused a broad impact globally, may materially impact us economically. While the extent of the global economic impact brought by, and the duration of, COVID- 19 may be difficult to assess or predict, the~~ pandemic ~~has significantly increased economic uncertainty and has resulted in, and may continue~~ **continues** ~~to result in~~ , **it** ~~significant disruption of, and volatility in, global financial markets, which~~ could ~~reduce our ability to access capital and negatively affect our liquidity or could result~~ in ~~a recession or market correction, which could materially adversely affect our business, operations, and~~ the ~~value of our common stock. COVID- 19 continues to evolve rapidly, and multiple variants of the virus that causes COVID- 19 are circulating globally. We cannot predict the potential~~ future **have a material adverse effect** ~~impacts of COVID- 19, including its variants,~~ on us and third parties with whom we conduct business, including on our clinical studies and our clinical trial for ATRC- 101 and related timelines ~~,~~ as well as our preclinical activities. ~~These~~ -- **The extent to which the COVID- 19 pandemic may** ~~impacts~~ **impact our operational and financial performance remains uncertain and** will depend on **many factors outside our control** ~~future developments that are highly uncertain and cannot be predicted with confidence~~ , **including** ~~such as~~ the **timing** ~~ultimate geographic spread of the disease~~ , **the** ~~the~~ **extent, trajectory and** duration of the ~~outbreak~~ **pandemic** , ~~containment~~ **the emergence of new variants, the development, availability, distribution and effectiveness of vaccines and treatments, the imposition of protective public safety** measures **,** and ~~other~~ -- **the** ~~limitations and restrictions, business disruptions and the effectiveness of actions taken in the United States and other countries to contain, vaccinate against, and treat~~

~~the disease. Given these uncertainties, we do not yet know the full extent of the potential impacts -~~ **impact of the pandemic** on ~~our business, our clinical and regulatory activities, healthcare systems, or~~ the global economy **and demand for our products. To the extent the COVID- 19 pandemic continues to disrupt economic activity globally, it could adversely affect our ability to access capital, which could in the future negatively affect our liquidity** . As a result, COVID- 19 could materially adversely affect our business, financial condition, results of operations, growth prospects, and our ability to execute on our business strategies in the future and potentially disrupt the business of third parties with whom we do business, including our existing and potential future collaborators, any of which could also have the effect of heightening many of the other risks and uncertainties described in this ‘ ‘ Risk Factors’’ section. **- 30-** Failure to successfully validate, develop and obtain regulatory approval for companion diagnostics for our product candidates could harm our drug development strategy and operational results. As one of the elements of our clinical development approach, we may seek to develop lab- based tests to screen and identify subsets of patients who ~~are~~ **may be** more likely to benefit from our product candidates, more commonly referred to as companion diagnostics. To achieve this, we may seek to develop and commercialize such companion diagnostics ourselves or through third- party collaborators. For example, for ATRC- 101, we ~~are developing~~ **have developed** a diagnostic to select participants based on **ATRC- 101** target expression. Companion diagnostics are generally developed in conjunction with clinical programs for the associated product and can be helpful in enrolling patients in clinical studies who ~~are~~ **may be** more likely to respond to the specific therapeutic being developed. The approval of a companion diagnostic as part of the product label could limit the use of the product candidate to those patients ~~who~~ **whose** ~~are more likely to benefit from our product candidate~~ **companion diagnostic test is positive for ATRC- 101 target** . Companion diagnostics are subject to regulation by the FDA and other regulatory authorities as medical devices and **typically** require separate clearance or approval prior to their commercialization **or certain uses in clinical trials** . To date, the FDA has required premarket approval of ~~all~~ companion diagnostics for oncology therapies. We and our third- party collaborators may encounter difficulties in developing and obtaining approval for these companion diagnostics. Any delay or failure by us or third- party collaborators to develop or obtain regulatory approval of a companion diagnostic could delay or prevent approval of our ~~related~~ **corresponding** product candidates. The time and cost associated with developing a companion diagnostic may not prove to have been necessary in order to successfully **obtain regulatory approvals or** market the product. ~~- 29-~~ We may not be successful in our efforts to use and expand our discovery platform to build a pipeline of product candidates **and develop and commercialize them** . A key element of our strategy is to use and expand our discovery platform to build a pipeline of product candidates **. Our discovery platform is evolving,** and ~~progress these~~ **we are only beginning to build a pipeline of** product candidates ~~through clinical development for the treatment of various diseases~~ . ~~Although~~ **To date,** our research and development efforts ~~to date~~ have resulted in our discovery **of ATRC- 101** and **earlier stage** preclinical **assets. ATRC- 101 and any of our other assets may not advance through research and** development **and ultimately** ~~of ATRC- 101, ATRC- 101 may not~~ be safe or effective as a cancer treatment, and we may not be able to develop any other product candidates. In addition, as a result of COVID- 19, we ~~expect~~ **have experienced** disruptions and delays in our efforts, both internally and externally with third parties, to use and expand our discovery platform. **Even if we are successful in** ~~Our discovery platform is evolving and may not reach a state at which~~ building ~~a~~ **our** pipeline of product candidates ~~is possible. Even if we are successful in building our pipeline of product candidates~~ , **we may not be able to progress** ~~the~~ **them through preclinical and clinical development and commercialization for the treatment of various diseases. We may not have the substantial technical, financial, and personnel resources to progress any** potential product candidates that we identify **, or we may not allocate these resources to the most commercially viable product candidate. In addition, the potential product candidates that we identify** may not be suitable for **preclinical or** clinical development or generate acceptable ~~clinical~~ data, including as a result of being shown to have unacceptable toxicity or other characteristics that indicate that they are unlikely to be products that will receive marketing approval from the FDA or other regulatory authorities or achieve market acceptance. If we do not successfully ~~develop and commercialize~~ **build a pipeline of** product candidates **and develop and commercialize them** , we will not be able to generate product revenue in the future. Our approach to developing and identifying ~~our~~ antibodies using our discovery platform is novel and unproven and may not result in marketable products. We **are** ~~plan to develop~~ **developing** a pipeline of product candidates using our discovery platform. We believe that we may be able to overcome certain key limitations of the current oncology drug discovery paradigm by focusing on an active human anti- tumor immune response that develops over time. However, our scientific research that forms the basis of our efforts to discover product candidates based on our discovery platform is ongoing. Further, the scientific evidence to support the feasibility of developing therapeutic antibodies based on our platform has not been established. We may not be correct in our beliefs about the differentiated nature of our platform to competing technologies, and our platform may not prove to be superior. If our discovery platform is not able to develop approved antibody constructs that are effective **- 31-** at the necessary speed or scale, it could have a material and adverse effect on our business, financial condition, results of operations and prospects. The market may not be receptive to our current or potential future product candidates, and we may not generate any revenue from the sale or licensing of our product candidates. Even if regulatory approval is obtained for a product candidate, including ATRC- 101, we may not generate or sustain revenue from sales of the product. Market acceptance of our current and potential future product candidates will depend on, among other factors: the timing of our receipt of any marketing and commercialization approvals; the terms of any approvals and the countries in which approvals are obtained; the safety and efficacy of our product candidates; the prevalence and severity of any adverse side effects associated with our product candidates; limitations or warnings contained in any labeling approved by the FDA or other regulatory authority; relative convenience and ease of administration of our product candidates; the success of our physician education programs; the availability of coverage and adequate government and third- party payor reimbursement; the pricing of our products, particularly as compared to alternative treatments; and availability of alternative effective treatments for the disease indications our product candidates are intended to treat and the relative risks, benefits and costs of

those treatments. If any product candidate we commercialize fails to achieve market acceptance, it could have a material and adverse effect on our business, financial condition, results of operations and prospects. - 30 - If there are undesirable side effects caused by ATRC- 101 or any potential future product candidate in clinical trials or after receiving marketing approval, our ability to market and derive revenue from the product candidate could be compromised. Undesirable side effects caused by ATRC- 101 or any potential future product candidate could cause regulatory authorities to interrupt, delay or halt clinical trials and could result in a more restrictive label or the delay or denial of regulatory approval by the FDA or other regulatory authorities. It is likely that there will be side effects associated with the use of ATRC- 101 or any potential future product candidate. Results of our clinical trials could reveal a high and unacceptable severity and prevalence of these side effects. In such an event, our trials could be suspended or terminated and the FDA or other regulatory authorities could order us to cease further development of or deny approval of a product candidate for any or all targeted indications. Such side effects could also affect patient recruitment or the ability of enrolled patients to complete the trial or result in potential product liability claims. Any of these occurrences may materially and adversely affect our business and financial condition and impair our ability to generate revenues. Further, clinical trials by their nature utilize a sample of the potential patient population. With a limited number of patients and limited duration of exposure, rare and severe side effects of a product candidate may only be uncovered when a significantly larger number of patients are exposed to the product candidate or when patients are exposed for a longer period of time. In the event that any of our current or potential future product candidates receive regulatory approval and we or others identify undesirable side effects caused by one of these products, any of the following adverse events could occur, which could result in the loss of significant revenue to us and materially and adversely affect our results of operations and business: regulatory authorities may withdraw their approval of the product or seize the product; we may be required to recall the product or change the way the product is administered to patients; additional restrictions may be imposed on the marketing of the particular product or the manufacturing processes for the product or any component thereof; we may be subject to fines, injunctions or the imposition of civil or criminal penalties; **- 32-** regulatory authorities may require the addition of labeling statements, such as a ‘ ‘ black box’’ warning or a contraindication; we may be required to create a Medication Guide outlining the risks of such side effects for distribution to patients; we could be sued and held liable for harm caused to patients; the product may become less competitive; and our reputation may suffer. We will need substantial additional funds to advance development of product candidates and our discovery platform, and we cannot guarantee that we will have sufficient funds available in the future to develop and commercialize our current or potential future product candidates. The development of biopharmaceutical product candidates is capital- intensive. If ATRC- 101 or potential future product candidates advance through preclinical studies and clinical trials, we will need substantial additional funds to expand our development, regulatory, manufacturing, marketing and sales capabilities. We have used substantial funds to develop our discovery platform **,** and **we** ~~ATRC- 101 and~~ will require significant funds to continue to develop our discovery platform and conduct further research and development, including preclinical studies and clinical trials of ATRC- 101 and additional potential future product candidates, to seek regulatory approvals for ATRC- 101 and potential future product candidates and to manufacture and market products, if any, that are approved for commercial sale. In addition, we expect to incur additional costs associated with operating as a public company. As of December 31, ~~2021~~ **2022** , we had $ ~~148~~ **70** . ~~1~~ **5** million in cash, cash equivalents, and investments. Based on our current operating plan, we believe that our cash, cash equivalents, and investments as of December 31, ~~2021~~ **2022** will be sufficient to fund our operations for at least the next 12 months. Our future capital requirements and the period for which we expect our existing resources to support our operations may vary significantly from what we expect. Our monthly ~~- 31-~~ spending levels vary based on new and ongoing research and development and other corporate activities. Because the length of time and activities associated with successful research and development of product candidates is highly uncertain, we are unable to estimate the actual funds we will require for development and any approved marketing and commercialization activities. The timing and amount of our operating expenditures will depend largely on: the timing and progress of preclinical and clinical development activities; the timing and progress of our development of our discovery platform; the price and pricing structure that we are able to obtain from our third- party contract manufacturers to manufacture our preclinical study and clinical trial materials and supplies; the number and scope of preclinical and clinical programs we decide to pursue; our ability to maintain our current licenses and research and development programs and to establish new collaborations; the progress of the development efforts of parties with whom we may in the future enter into collaboration and research and development agreements; the costs involved in obtaining, maintaining, enforcing and defending patents and other intellectual property rights; the cost and timing of regulatory approvals; and our efforts to enhance operational systems, secure sufficient laboratory space and hire additional personnel, including personnel to support development of our product candidates and satisfy our obligations as a public company. To date, we have primarily financed our operations through the sale of equity securities and payments and other income received under discovery services agreements not related to our primary business. We may seek to raise any necessary additional capital through a combination of public or private equity offerings, debt financings, collaborations, strategic alliances, licensing arrangements and other marketing and distribution arrangements. We cannot assure you that we will be successful in acquiring additional funding at levels sufficient to fund our operations or on terms favorable to us. For example, as a result of the ~~ongoing~~ COVID- 19 pandemic or political, social, and economic instability abroad, including as a result of armed conflict, war or the threat of war, in particular, the current conflict in Ukraine, terrorist activity and other security concerns in general, there could be a significant disruption of global financial markets, impairing our ability to **- 33-** raise capital when needed on acceptable terms, if at all **. We are actively monitoring the situation in Ukraine and Russia and assessing its impact on our business, including our business partners. To date, we have not experienced any material interruptions in our operations. The extent and duration of the conflict, sanctions, and resulting market disruptions could be significant and could potentially have substantial impact on the global economy and our business for an unknown period of time. Any such disruption could also have the effect of heightening many of the other risks and**

uncertainties described in this " Risk Factors " section under Part I, Item 1A of this Form 10- K . If we are unable to obtain adequate financing when needed, we may have to delay, reduce the scope of or suspend one or more of our preclinical studies, clinical trials, research and development programs or commercialization efforts. Because of the numerous risks and uncertainties associated with the development and commercialization of our current and potential future product candidates and the extent to which we may enter into collaborations with third parties to participate in their development and commercialization, we are unable to estimate the amounts of increased capital outlays and operating expenditures associated with our current and anticipated preclinical studies and clinical trials. To the extent that we raise additional capital through collaborations, strategic alliances or licensing arrangements with third parties, we may have to relinquish valuable rights to our current and potential future product candidates, future revenue streams or research programs or to grant licenses on terms that may not be favorable to us. If we do raise additional capital through public or private equity or convertible debt offerings, the ownership interest of our existing stockholders will be diluted, and the terms of these securities may include liquidation or other preferences that adversely affect our stockholders' rights. If we raise additional capital through debt financing, we may be subject to covenants limiting or restricting our ability to take specific actions, such as incurring additional debt, making capital expenditures or declaring dividends. We do not expect to realize revenue from product sales or royalties from licensed products in the foreseeable future, if at all, and unless and until our current and potential future product candidates are clinically tested, approved for commercialization and successfully marketed. We may expend our limited resources to pursue a particular product candidate and fail to capitalize on product candidates that may be more profitable or for which there is a greater likelihood of success. Because we have limited financial and managerial resources, we intend to focus our efforts on specific research and development programs, including clinical development of ATRC- 101. As a result, we may forgo or delay pursuit of other opportunities, including with potential future product candidates that later prove to have greater commercial ~~- 32 -~~ potential. Our resource allocation decisions may cause us to fail to capitalize on viable commercial products or profitable market opportunities. Our spending on current and future research and development programs and product candidates for specific indications may not yield any commercially viable product candidates. If we do not accurately evaluate the commercial potential or target market for a particular product candidate, we may relinquish valuable rights to that product candidate through partnership, 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. We have obtained rights to use human samples in furtherance of our research and development of our current and potential future product candidates. However, if we fail to obtain appropriate consent or exceed the scope of the permission to use these samples, we may become liable for monetary damages for, obligated to pay continuing royalties for or required to cease usage of the samples. We begin our discovery process by gathering samples from patients. While we attempt to ensure that we, our study site partners or other providers have obtained these samples with informed consent and all necessary permissions, there is a risk that one or more patients or their representatives may assert that we have either failed to obtain informed consent or exceeded the scope of permission to use the patient' s sample. We cannot guarantee that we would succeed in establishing that we had informed consent or appropriate permission, if a patient or patient representative contested the matter. In such circumstances, we could be required to pay monetary damages, to pay a continuing royalty on any products created or invented by analyzing the patient' s sample or even to cease using the sample and any and all materials derived from or created through analysis of the sample, any of which could result in a change to our business plan and materially harm our business, financial condition, results of operations and prospects. **- 34-** We have entered into, and may in the future enter into, strategic transactions for the research, development and commercialization of certain of our current and potential future product candidates. If any of these transactions are not successful, then we may not be able to capitalize on the market potential of such product candidates. Further, we may not be able to enter into future transactions on acceptable terms, if at all, which could adversely affect our ability to develop and commercialize current and potential future product candidates, impact our cash position, increase our expense, and present significant distractions to our management. From time to time, we have entered into, and may enter into in the future, strategic transactions, such as collaborations, acquisitions of companies, asset purchases, joint ventures and out- or in- licensing of product candidates or technologies. For example, in July 2020, we entered into a collaboration and license agreement with Xencor ~~, Inc~~ . Our ability to generate revenue from any of our strategic transactions will depend on our partners' abilities to successfully perform the functions assigned to them in these transactions. We cannot predict the success of any of our strategic transactions. We also intend to evaluate and, if strategically attractive, seek to enter into additional collaborations in the future, including with biotechnology or biopharmaceutical companies or hospitals. The competition for partners is intense, and the negotiation process is time- consuming and complex. If we are not able to enter into strategic transactions, we may not have access to required liquidity or expertise to further develop our potential future product candidates or our discovery platform. Any existing or potential future collaboration or other strategic transaction may require us to incur non- recurring or other charges, increase our near- and long- term expenditures and pose significant integration or implementation challenges or disrupt our management or business. We may acquire additional technologies and assets, form strategic alliances or create joint ventures with third parties that we believe will complement or augment our existing business, but we may not be able to realize the benefit of such acquisitions or collaborations. In addition, any new collaboration that we enter into may be on terms that are not optimal for us. Our existing and future strategic transactions would entail numerous operational and financial risks, including: exposure to unknown liabilities; disruption of our business and diversion of our management' s time and attention in order to manage a collaboration or develop acquired products, product candidates or technologies; ~~- 33 -~~ incurrence of substantial debt or dilutive issuances of equity securities to pay transaction consideration or costs; higher- than- expected collaboration, acquisition or integration costs, write- downs of assets or goodwill or impairment charges, increased amortization expenses; collaborators have significant discretion in determining the efforts and resources they apply to these collaborations, and may not pursue development of any product candidates we may develop or may elect not to continue development programs based on preclinical study results, changes in the collaborator' s

strategic focus or other factors that may be beyond our control; collaborators could independently develop, or develop with third parties, products that may compete directly or indirectly with our product candidates if the collaborators believe that the competitive products are more likely to be successfully developed or can be commercialized under terms that are more economically attractive than ours; product candidates discovered in collaboration with us may be viewed by our collaborators as competitive with their own product candidates or products, which may cause collaborators to cease to devote resources to the development or commercialization of our product candidates; difficulty and cost in facilitating the collaboration or combining the operations and personnel of any acquired business; disputes may arise between a collaborator and us, including with respect to the ownership of any intellectual property developed pursuant to our collaborations, that cause the delay or termination of the research, development or commercialization of a product candidate, or that result in costly litigation or arbitration that diverts management' s attention and resources; **- 35-** impairment of relationships with key suppliers, manufacturers or customers of any acquired business due to changes in management and ownership; and the inability to retain key employees of any acquired business. Accordingly, although there can be no assurance that we will undertake or successfully complete any strategic transactions of the nature described above, any collaborations that we are currently engaged in or transactions we may complete in the future may be subject to the foregoing or other risks and our business could be materially harmed by such transactions. Conversely, any failure to enter any collaboration or other strategic transaction that would be beneficial to us could delay the development and potential commercialization of our product candidates and have a negative impact on the competitiveness of any product candidate that reaches market. In addition, to the extent that any of our existing or future partners were to terminate a collaboration agreement, we may be forced to independently develop our current and future product candidates, including funding preclinical studies or clinical trials, assuming marketing and distribution costs and maintaining, enforcing and defending intellectual property rights, or, in certain instances, abandon product candidates altogether, any of which could result in a change to our business plan and materially harm our business, financial condition, results of operations and prospects. If third parties on which we ~~intend~~ **have relied, and will continue** to rely **,** to conduct certain preclinical studies, or any future clinical trials, do not perform as contractually required, fail to satisfy regulatory or legal requirements or miss expected deadlines, our development program could be delayed or fail, which would have material and adverse impacts on our business and financial condition. We ~~intend~~ **have relied, and will continue** to rely **,** on third- party clinical investigators, contract research organizations, or CROs, clinical data management organizations and consultants to conduct, supervise and monitor certain preclinical studies and any clinical trials. Because we intend to rely on these third parties and will not have the ability to conduct certain preclinical studies or clinical trials independently, we will have less control over the timing, quality and other aspects of such preclinical studies and clinical trials than we would have had we conducted them on our own. These investigators, CROs and consultants will not be our employees and we will have limited control over the amount of time and resources that they dedicate to our programs. These third parties may have contractual relationships with other entities, some of which may be our competitors, which may draw time and resources from our programs. The third parties with which we may contract might not be diligent, careful or timely in conducting our preclinical studies or clinical trials, resulting in the preclinical studies or clinical trials being delayed or unsuccessful. If we cannot contract with acceptable third parties on commercially reasonable terms, or at all, or if these third parties do not carry out their contractual duties, satisfy legal ~~- 34 -~~ and regulatory requirements for the conduct of preclinical studies or clinical trials or meet expected deadlines, our clinical development programs could be delayed or fail, or could be otherwise adversely affected. In all events, we will be responsible for ensuring that each of our preclinical studies and clinical trials are conducted in accordance with the general investigational plan and protocols for the trial. The FDA may require preclinical studies to be conducted in accordance with good laboratory practices and clinical trials to be conducted in accordance with good clinical practices, including for designing, conducting, recording and reporting the results of preclinical studies and clinical trials to ensure that data and reported results are credible and accurate and that the rights, integrity and confidentiality of clinical trial participants are protected. Our reliance on third parties that we do not control will not relieve us of these responsibilities and requirements. Any adverse development or delay in our clinical trials could have a material and adverse impact on our commercial prospects and may impair our ability to generate revenue. We are working closely with our third- party clinical investigators, clinical CROs, clinical data management organizations and clinical consultants, preclinical CROs and other vendors of preclinical materials and services to mitigate potential disruptions and delays in our clinical trial for ATRC- 101 and our preclinical studies due to COVID- 19. However, COVID- 19 **, including its variants,** may lead to significant disruptions or material delays in our preclinical studies and our clinical trial, which would adversely impact our business, financial condition, results of operations and commercial prospects. **- 36-** Clinical trials are expensive, time- consuming and difficult to design and implement. Human clinical trials are expensive and difficult to design and implement, in part because they are subject to rigorous regulatory requirements. Because our current and potential future product candidates are based on new technologies and discovery approaches, we expect that they will require extensive research and development and have substantial manufacturing and processing costs. In addition, costs to treat patients and to treat potential side effects that may result from our product candidates may be significant. Accordingly, our clinical trial costs are likely to be high and could have a material and adverse effect on our business, financial condition, results of operations and prospects. If we encounter difficulties enrolling patients in our clinical trials, our clinical development activities could be delayed or otherwise adversely affected. We may not be able to initiate or continue clinical trials for our current or potential future product candidates if we are unable to locate and enroll a sufficient number of eligible patients to participate in these trials as required by the FDA or other regulatory authorities. In particular, we initiated a Phase 1b clinical trial for ATRC- 101 in patients with a limited number of tumor types. We cannot predict how difficult it will be to enroll patients for trials in these indications. We may experience difficulties in patient enrollment in our clinical trials for a variety of reasons. The enrollment of patients depends on many factors, including: the severity of the disease under investigation; the patient eligibility criteria defined in the clinical trial protocol; the size of the patient

population required for analysis of the trial' s primary endpoints; the proximity and availability of clinical trial sites for prospective patients; the patient referral practices of physicians; our ability to recruit clinical trial investigators with the appropriate competencies and experience; clinicians' and patients' perceptions as to the potential advantages of the product candidate being studied in relation to other available therapies, including any new drugs that may be approved for the indications we are investigating; our ability to obtain and maintain patient consents; and the risk that patients enrolled in clinical trials will drop out of the trials before completion. In our clinical trial for ATRC- 101, we experienced delays ~~in initiating sites, achieving patient compliance with study-~~ related **to COVID- 19** ~~procedures, and enrolling patients~~ in ~~the second and third quarters of~~ 2020 ~~due to COVID- 19~~ , **2021,** and **2022, and** we **may continue to** ~~experienced~~ - **experience such** delays **in 2023, primarily** in enrolling and treating patients ~~at a few sites in 2021~~ due to COVID- 19 ~~infections~~ **protocols** and **site** staff shortages **. In addition, we are experiencing delays in enrolling and treating patients due to broader staff shortages in healthcare facilities, including at our clinical trial sites, and due to our updated clinical trial protocol that requires patients to have target expression in the tumor types under investigation** . We are working closely with our current and potential clinical trial sites to mitigate any potential disruptions and delays. However, COVID- 19 **, site staff shortages, our updated protocol, and other factors** may continue to impact our ~~ability to initiate additional~~ clinical trial ~~sites quickly~~ , **including** ~~and may lead to~~ significant disruptions or material delays in our ability to enroll patients, which could adversely impact the ~~- 35-~~ cost, timing, or outcome of our clinical trial for ATRC- 101 and our ability to advance the development of ATRC- 101. In addition, our future clinical trials will compete with other clinical trials for product candidates that are in the same therapeutic areas as our product candidates, and this competition will reduce the number and types of patients available to us, because some patients who might have opted to enroll in our trials may instead opt to enroll in a trial being conducted by one of our competitors. Since the number of qualified clinical investigators is limited, we expect to conduct some of our clinical trials at the same clinical trial sites that some of our competitors use, which will reduce the number of patients who are available for our clinical trials at such clinical trial sites. Additionally, because some of our clinical trials will be in patients with advanced solid tumors, the patients are typically in the late stages of the disease and may experience disease progression or adverse events independent from our product candidates, making them unevaluable for purposes of the trial and requiring additional enrollment. Delays in patient enrollment may result in increased costs or may affect the timing or outcome of the planned clinical trials, which could prevent completion of these trials and adversely affect our ability to advance the development of our product candidates. **- 37-** We may not be able to conduct, or contract others to conduct, animal testing in the future, which could harm our research and development activities. Certain laws and regulations relating to drug development require us to test our product candidates on animals before initiating clinical trials involving humans. Animal testing activities have been the subject of controversy and adverse publicity. Animal rights groups and other organizations and individuals have attempted to stop animal testing activities by pressing for legislation and regulation in these areas and by disrupting these activities through protests and other means. To the extent the activities of these groups are successful, our research and development activities may be interrupted or delayed. Because we may rely on third parties for manufacturing and supply of our product candidates, some of which are or may be sole source vendors, for preclinical and clinical development materials and commercial supplies, our supply may become limited or interrupted or may not be of satisfactory quantity or quality. We currently rely on third- party contract manufacturers for our preclinical and future clinical trial product materials and supplies. We do not produce any meaningful quantity of our product candidates for preclinical and clinical development, and we do not currently own manufacturing facilities for producing such supplies. Furthermore, some of our manufacturers may represent our sole source of supplies of preclinical and future clinical development materials, including our source for the manufacture of ATRC **-** 101. We cannot assure you that our preclinical or future clinical development product supplies and commercial supplies will not be limited or interrupted or will be of satisfactory quality or continue to be available at acceptable prices. In particular, any replacement of our manufacturers could require significant effort and expertise because there may be a limited number of qualified replacements. For our current and any future sole source third- party manufacturing and supply partners, we may be unable to negotiate binding agreements with them or find replacement manufacturers to support our preclinical and future clinical activities at commercially reasonable terms in the event that their services to us becomes interrupted for any reason. We may not have arrangements in place for a redundant or second- source supply for our sole source vendors in the event they cease to provide their products or services to us or do not timely provide sufficient quantities to us. Establishing additional or replacement vendors, if required, may not be accomplished quickly. Any delays, whether due to COVID- 19 or otherwise, resulting from manufacturing or supply interruptions associated with our reliance on third- party manufacturing and supply partners, including those that are sole source, could impede, delay, limit or prevent our drug development efforts, which could harm our business, result of operations, financial condition and prospects. We ~~are working~~ **continue to work** closely with our third- party manufacturers to mitigate **any** potential disruptions or delays to the supply of our preclinical, clinical, and commercial materials due to COVID- 19. However, COVID- 19 may lead to significant disruptions or material delays in our ability to receive these materials, and our ability to engage new third- party manufacturers, which could adversely impact our business, financial condition and results of operations. The manufacturing process for a product candidate is subject to FDA and other regulatory authority review. Suppliers and manufacturers must meet applicable manufacturing requirements and undergo rigorous facility and ~~- 36-~~ process validation tests required by regulatory authorities in order to comply with regulatory standards, such as current Good Manufacturing Practices, or cGMP. In the event that any of our manufacturers fails to comply with such requirements or to perform its obligations to us in relation to quality, timing or otherwise, or if our supply of components or other materials becomes limited or interrupted for other reasons, we may be forced to manufacture the materials ourselves, for which we currently do not have the capabilities or resources, or enter into an agreement with another third party, which we may not be able to do on reasonable terms, or at all. In some cases, the technical skills or technology required to manufacture our current and future product candidates may be unique or proprietary to the original manufacturer and we may

have difficulty transferring such skills or technology to another third party and a feasible alternative may not exist. These factors would increase our reliance on such manufacturer or require us to obtain a license from such manufacturer in order to have another third party manufacture our product candidates. If we are required to change manufacturers for any reason, we will be required to verify that the new manufacturer maintains facilities and procedures that comply with quality standards and with all applicable regulations and guidelines. The delays associated with the verification of a new manufacturer could negatively affect our ability to develop product candidates in a timely manner or within budget. **- 38-** We also expect to rely on third- party manufacturers if we receive regulatory approval for any product candidate. We have existing, and may enter into future, manufacturing arrangements with third parties. We will depend on these third parties to perform their obligations in a timely manner consistent with contractual and regulatory requirements, including those related to quality control and assurance. If we are unable to obtain or maintain third- party manufacturing for any product candidate, or to do so on commercially reasonable terms, we may not be able to develop and commercialize our product candidates successfully. Our or a third party' s failure to execute on our manufacturing requirements and comply with cGMP could adversely affect our business in a number of ways, including: an inability to initiate or continue clinical trials of product candidates under development; delay in submitting regulatory applications, or receiving regulatory approvals, for product candidates; loss of the cooperation of a potential future partner; subjecting third- party manufacturing facilities or our potential future manufacturing facilities to additional inspections by regulatory authorities; requirements to cease distribution or to recall batches of product candidates; and in the event of approval to market and commercialize a product candidate, an inability to meet commercial demands for our products. Our third- party manufacturers may be unable to successfully scale manufacturing of ATRC- 101 or potential future product candidates in sufficient quality and quantity, which would delay or prevent us from developing product candidates and commercializing approved products, if any. In order to conduct clinical trials for ATRC- 101 as well as any potential future product candidates, we will need to manufacture large quantities of these product candidates. We may continue to and currently expect to use third parties for our manufacturing needs. Our manufacturing partners may be unable to successfully increase the manufacturing capacity for any current or potential future product candidate in a timely or cost- effective manner, or at all. In addition, quality issues may arise during scale- up activities. If our manufacturing partners are unable to successfully scale the manufacture of any current or potential future product candidate in sufficient quality and quantity, the development, testing and clinical trials of that product candidate may be delayed or infeasible, and regulatory approval or commercial launch of any potential resulting product may be delayed or not obtained, which could significantly harm our business. If the market opportunities for our current and potential future product candidates, including ATRC- 101, are smaller than we believe they are, our future product revenues may be adversely affected and our business may suffer. Our understanding of the number of people who suffer from certain types of cancers and tumors that may be able to be treated with antibodies that have been and may in the future be identified by our discovery platform, including ATRC- 101, is based on estimates. These estimates may prove to be incorrect, and new studies may reduce the estimated incidence or prevalence of these diseases. The number of patients in the United States or elsewhere may turn out to be lower than expected, may not be otherwise amenable to treatment with our current or potential future product candidates or patients may become increasingly difficult to identify and access, all of which would adversely affect our business ~~- 37-~~ prospects and financial condition. In particular, the treatable population for ATRC- 101 may **be** further ~~be~~ reduced if our estimates of addressable populations are erroneous or sub- populations of patients do not derive benefit from ATRC- 101. Further, there are several factors that could contribute to making the actual number of patients who receive our current or potential future product candidates less than the potentially addressable market. These include the lack of widespread availability of, and limited reimbursement for, new therapies in many underdeveloped markets. We face competition from entities that have developed or may develop product candidates for the treatment of the diseases that we may target, including companies developing novel treatments and technology platforms. If these companies develop technologies or product candidates more rapidly than we do, or if their technologies or product candidates are more effective, our ability to develop and successfully commercialize product candidates may be adversely affected. The development and commercialization of drugs and therapeutic biologics is highly competitive. We compete with a variety of large pharmaceutical companies, multinational biopharmaceutical companies, other biopharmaceutical **- 39-** companies and specialized biotechnology companies, as well as technology being developed at universities and other research institutions. Our competitors are often larger and better funded than we are. Our competitors have developed, are developing or will develop product candidates and processes competitive with ours. Competitive therapeutic treatments include those that have already been approved and accepted by the medical community and any new treatments that are currently in development or that enter the market. We believe that a significant number of products are currently under development, and may become commercially available in the future, for the treatment of conditions for which we may try to develop product candidates. There is intense and rapidly evolving competition in the biotechnology, biopharmaceutical and antibody and immuno- oncology fields. We believe that while our discovery platform, its associated intellectual property, the characteristics of ATRC- 101 **,** and **other** potential future product candidates and our scientific and technical know- how together give us a competitive advantage in this space, competition from many sources remains. We are aware of a number of companies that are developing antibodies for the treatment of cancer. Many of these companies are well- capitalized and, in contrast to us, have significant clinical experience, and may include our future partners. In addition, these companies compete with us in recruiting scientific and managerial talent. Our success will partially depend on our ability to obtain, maintain, enforce and defend patents and other intellectual property rights with respect to antibodies that are safer and more effective than competing products. Our commercial opportunity and success will be reduced or eliminated if competing products that are safer, more effective, or less expensive than the antibodies we develop are or become available. We expect to compete with antibody, biologics and other therapeutic platforms and development companies, including, but not limited to, companies such as Adaptive Biotechnologies Corporation, Neurimmune Holding AG, OncoResponse **, Inc., Immunome** , Inc., and Vir Biotechnology, Inc. In addition, we expect to compete with large, multinational

pharmaceutical companies that discover, develop and commercialize antibodies and other therapeutics for use in treating cancer such as AstraZeneca plc, Bristol- Myers Squibb Company, Genentech, Inc. and Merck & Co., Inc. If ATRC- 101 or potential future product candidates are eventually approved, they will compete with a range of treatments that are either in development or currently marketed. For example, we expect that ATRC- 101 and our potential future product candidates may compete against traditional cancer therapies, such as chemotherapy, as well as cell- based treatments for cancer, such as CAR- T therapies. Many of our competitors have significantly greater financial, technical, manufacturing, marketing, sales and supply resources or experience than we do. If we successfully obtain approval for any product candidate, we will face competition based on many different factors, including the safety and effectiveness of our products, the ease with which our products can be administered, the timing and scope of regulatory approvals for these products, the availability and cost of manufacturing, marketing and sales capabilities, price, reimbursement coverage and patent position. Competing products could present superior treatment alternatives, including by being more effective, safer, less expensive or marketed and sold more effectively than any products we may develop. Competitive products may make any product we develop obsolete or noncompetitive before we recover the expense of developing and commercializing such product. ~~- 38 -~~ Such competitors could also recruit our employees, which could negatively impact our level of expertise and our ability to execute our business plan. Any inability to attract and retain qualified key management, technical personnel and employees would impair our ability to implement our business plan. Our success largely depends on the continued service of key management, advisors and other specialized personnel, including John A. Orwin, our ~~president~~ **President** and ~~chief~~ **Chief** ~~executive~~ **Executive** ~~officer~~ **Officer** , and Tito A. Serafini, our ~~chief~~ **Chief** ~~strategy~~ **Strategy** ~~officer~~ **Officer** and ~~founder~~ **Founder** . We have a written employment agreement with each of Mr. Orwin and Dr. Serafini. The loss of one or more members of our executive team, management team or other key employees or advisors could delay our research and development programs and have a material and adverse effect on our business, financial condition, results of operations and prospects. **We completed a workforce reduction in June 2022, and, following the reduction, the number of our full- time employees further decreased from 105 as of June 30, 2022 to 90 as of December 31, 2022. Our success is dependent in part upon our ability to attract, develop and retain highly qualified employees, and the reductions in our workforce in 2022 may have adversely affected the morale of our existing employees, our culture, and our ability to attract and retain employees in the future.** ~~- 40 -~~ The relationships that our key managers have cultivated within our industry make us particularly dependent upon their continued employment with us. We are dependent on the continued service of our technical personnel because of the highly technical nature of our product candidates and technologies and the specialized nature of the regulatory approval process. Because our management team and key employees are not obligated to provide us with continued service, they could terminate their employment with us at any time without penalty. Our future success will depend in large part on our continued ability to attract and retain other highly qualified scientific, technical and management personnel, as well as personnel with expertise in clinical testing, manufacturing, governmental regulation and commercialization. We face competition for personnel from other companies, universities, public and private research institutions, government entities and other organizations. ~~As of December 31, 2021, we had 134 full- time employees.~~ Our focus on the development of ATRC- 101 and potential future product candidates will require adequate staffing. We may need to hire and retain new employees to execute our future clinical development and manufacturing plans. We cannot provide assurance that we will be able to hire or retain adequate staffing levels to develop our current and potential future product candidates or run our operations or to accomplish all of our objectives. We may experience difficulties in managing our growth and expanding our operations. We have limited experience in product development. As our current and potential future product candidates enter and advance through preclinical studies and any clinical trials, we will need to expand our development, regulatory and manufacturing capabilities or contract with other organizations to provide these capabilities for us. We may also experience difficulties in the discovery and development of new potential future product candidates using our discovery platform if we are unable to meet demand as we grow our operations. In the future, we also expect to have to manage additional relationships with collaborators, suppliers and other organizations. Our ability to manage our operations and future growth will require us to continue to improve our operational, financial and management controls, reporting systems and procedures and secure adequate facilities for our operational needs. We may not be able to implement improvements to our management information and control systems in an efficient or timely manner and may discover deficiencies in existing systems and controls. If any of our product candidates is approved for marketing and commercialization in the future and we are unable to develop sales, marketing and distribution capabilities on our own or enter into agreements with third parties to perform these functions on acceptable terms, we will be unable to successfully commercialize any such future products. We currently have no sales, marketing or distribution capabilities or experience. We will need to develop internal sales, marketing and distribution capabilities to commercialize each current and potential future product candidate that gains FDA approval, which would be expensive and time- consuming, or enter into partnerships with third parties to perform these services. If we decide to market any approved products directly, we will need to commit significant financial and managerial resources to develop a marketing and sales force with technical expertise and supporting distribution, administration and compliance capabilities. If we rely on third parties with such capabilities to market any approved products or decide to co- promote products with partners, we will need to establish and maintain ~~- 39 -~~ marketing and distribution arrangements with third parties, and there can be no assurance that we will be able to enter into such arrangements on acceptable terms or at all. In entering into third- party marketing or distribution arrangements, any revenue we receive will depend upon the efforts of the third parties and we cannot assure you that such third parties will establish adequate sales and distribution capabilities or be successful in gaining market acceptance for any approved product. If we are not successful in commercializing any product approved in the future, either on our own or through third parties, our business and results of operations could be materially and adversely affected. Our future growth may depend, in part, on our ability to operate in foreign markets, where we would be subject to additional regulatory burdens and other risks and uncertainties. Our future growth may depend, in part, on our ability to develop and commercialize product candidates in foreign

markets for which we may rely on partnership with third parties. We will not be permitted to market or promote any product candidate before we receive regulatory approval from the applicable regulatory authority in a foreign market, and we may never receive such regulatory approval for any product candidate. To obtain separate regulatory - 41- approval in foreign countries, we generally must comply with numerous and varying regulatory requirements of such countries regarding safety and efficacy and governing, among other things, clinical trials and commercial sales, pricing and distribution of a product candidate, and we cannot predict success in these jurisdictions. If we obtain approval of any of our current or potential future product candidates and ultimately commercialize any such product candidate in foreign markets, we would be subject to risks and uncertainties, including the burden of complying with complex and changing foreign regulatory, tax, accounting and legal requirements and the reduced protection of intellectual property rights in some foreign countries. Price controls imposed in foreign markets may adversely affect our future profitability. In some countries, particularly member states of the European Union, the pricing of prescription drugs is subject to governmental control. In these countries, pricing negotiations with governmental authorities can take considerable time after receipt of marketing approval for a product. In addition, there can be considerable pressure exerted by governments and other stakeholders on prices and reimbursement levels, including as part of cost- containment measures. Political, economic and regulatory developments, in the United States or internationally, may further complicate pricing negotiations, and pricing negotiations may continue after reimbursement has been obtained. Reference pricing used by various European Union member states and parallel distribution, or arbitrage between low- priced and high- priced member states, can further reduce prices. In some countries, we or future partners may be required to conduct clinical trials or other studies that compare the cost- effectiveness of a product candidate to other available therapies in order to obtain or maintain reimbursement or pricing approval. Publication of discounts by third- party payors or authorities may lead to further pressure on the prices or reimbursement levels within the country of publication and other countries. If reimbursement of any current or potential future product candidate that is approved for marketing in the future is unavailable or limited in scope or amount, or if pricing is set at unsatisfactory levels, our business and results of operations or prospects could be materially and adversely affected and our ability to commercialize such product candidate could be materially impaired. Our business entails a significant risk of product liability, and our inability to obtain sufficient insurance coverage could have a material and adverse effect on our business, financial condition, results of operations and prospects. As we conduct clinical trials of ATRC- 101 or potential future product candidates, we will be exposed to significant product liability risks inherent in the development, testing, manufacturing and marketing of antibody treatments. Product liability claims could delay or prevent completion of our development programs. If we succeed in marketing products, such claims could result in an FDA investigation of the safety and effectiveness of our products, our manufacturing processes and facilities or our marketing programs and potentially a recall of our products or more serious enforcement action, limitations on the approved indications for which they may be used or suspension or withdrawal of approvals. Regardless of the merits or eventual outcome, liability claims may also result in decreased demand for our products, injury to our reputation, costs to defend the related litigation, a diversion of management' s time and our resources, substantial monetary awards to trial participants or patients and a decline in our stock price. Any insurance we have or may obtain may not provide sufficient coverage against potential liabilities. Furthermore, clinical trial and product liability insurance is becoming increasingly expensive. As a result, our partners or we may be unable to obtain ~~- 40-~~ sufficient insurance at a reasonable cost to protect us against losses caused by product liability claims that could have a material and adverse effect on our business, financial condition, results of operations and prospects. Our employees, principal investigators, consultants and commercial partners may engage in misconduct or other improper activities, including noncompliance with regulatory standards and requirements. We are exposed to the risk of fraud or other misconduct by our employees, principal investigators, consultants and commercial partners. Misconduct by employees could include intentional failures to comply with FDA regulations, provide accurate information to the FDA, comply with manufacturing standards we may establish, comply with federal and state healthcare fraud and abuse laws and regulations, report financial information or data accurately or disclose unauthorized activities to us. In particular, sales, marketing and business arrangements in the healthcare industry are subject to extensive laws and regulations intended to prevent fraud, kickbacks, self- dealing and other abusive practices. These laws and regulations may restrict or prohibit a wide range of pricing, discounting, marketing and promotion, sales commission, customer incentive programs and other business arrangements. Such misconduct could also involve the - 42- improper use of information obtained in the course of clinical trials, which could result in significant regulatory sanctions and serious harm to our reputation. For example, individuals conducting the non- interventional clinical studies that we sponsor through which we obtain antibodies for development into potential antibody- based therapeutics may violate applicable laws and regulations regarding patients' personal data. It is not always possible to identify and deter misconduct, and the precautions we take to detect and prevent this activity may not be effective in controlling unknown or unmanaged risks or losses or in protecting us from governmental investigations or other actions or lawsuits stemming from a failure to be in compliance with such laws or regulations. If any such actions are instituted against us, and we are not successful in defending ourselves or asserting our rights, those actions could have a material and adverse effect on our business and financial condition, including the imposition of significant criminal, civil, and administrative fines or other sanctions, such as monetary penalties, damages, fines, disgorgement, imprisonment, exclusion from participation in government- funded healthcare programs, such as Medicare and Medicaid, integrity obligations, reputational harm and the curtailment or restructuring of our operations. 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 or adverse publicity and could negatively affect our operating results and business. We and our current and 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 (e. g., the Health Insurance Portability and Accountability Act, or HIPAA, as amended by the Health Information Technology for Economic and Clinical Health Act, or HITECH), 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~~ HIPAA, as amended by HITECH, or other privacy and data security laws. Depending on the facts and circumstances, we could be subject to significant penalties if we obtain, use, or disclose individually identifiable health information maintained by a HIPAA- covered entity or business associate in a manner that is not authorized or permitted by HIPAA. International data protection laws, including Regulation 2016 / 679, known as the General Data Protection Regulation ~~(~~ **, or** GDPR ~~),~~ **,** may also apply to health- related and other personal information obtained outside of the United States. The GDPR went into effect on May 25, 2018. The GDPR introduced new data protection requirements in the European Union, as well as potential fines for noncompliant companies of up to the greater of e20 million or 4 % of annual global revenue. The regulation imposes numerous new requirements for the collection, use and disclosure of personal information, including more stringent requirements relating to consent and the information that must be shared with data subjects about how their personal information is used, the obligation to notify regulators and affected individuals of personal data breaches, extensive new internal privacy governance obligations and obligations to honor expanded rights of individuals in relation to their personal information (e. g., the right to access, correct and delete their data). In addition, the GDPR includes restrictions on cross- border data transfers. The GDPR will increase our ~~- 41 -~~ responsibility and liability in relation to personal data that we process where such processing is subject to the GDPR, and we may be required to put in place additional mechanisms to ensure compliance with the GDPR, including as implemented by individual countries. **A recent decision of the European Court of Justice, or CJEU, may increase the risk of GDPR litigation. Under the CJEU decision, a consumer protection association may bring representative actions alleging breaches of the GDPR even though a specific individual does not mandate the consumer protection association to act and a specific breach of any individual' s data protection rights is not demonstrated.** Further, the United Kingdom' s vote in favor of exiting the EU, often referred to as Brexit, has created uncertainty with regard to data protection regulation in the United Kingdom. In particular, it is unclear how data transfers to and from the United Kingdom will be regulated. In addition, California enacted the California Consumer Privacy Act ~~(~~ **, or** CCPA ~~),~~, which creates individual privacy rights for California consumers (as defined in the law) and places increased privacy and security obligations on entities handling personal data of consumers or households. The CCPA requires covered companies to provide new disclosure to consumers about such companies' data collection, use and sharing practices, provide such consumers new **- 43-** ways to opt- out of certain sales or transfers of personal information, and provide consumers with additional causes of action. The CCPA went into effect on January 1, 2020, and the California Attorney General may bring enforcement actions for violations beginning July 1, 2020. The CCPA was amended on September 23, 2018, and it remains unclear what, if any, further modifications will be made to this legislation or how it will be interpreted. As currently written, the CCPA may impact our business activities and exemplifies the vulnerability of our business to the evolving regulatory environment related to personal data and protected health information. 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 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. If we experience security or data privacy breaches or other unauthorized or improper access to, use of, or destruction of our proprietary or confidential data, employee data or personal data, we may face costs, significant liabilities, harm to our brand and business disruption. In connection with our discovery platform and efforts, we may collect and use a variety of personal data, such as name, mailing address, email addresses, phone number and clinical trial information. Although we have extensive measures in place to prevent the sharing and loss of patient data in our sample collection process associated with our discovery platform, any failure to prevent or mitigate security breaches or improper access to, use of, or disclosure of our clinical data or patients' personal data could result in significant liability under state (e. g., state breach notification laws), federal (e. g., HIPAA, as amended by HITECH), and international law (e. g., the GDPR). Any failure to prevent or mitigate security breaches or improper access to, use of, or disclosure of our clinical data or patients' personal data may cause a material adverse impact to our reputation, affect our ability to conduct new studies and potentially disrupt our business. We may also rely on third- party service providers to host or otherwise process some of our data and that of users, and any failure by such third party to prevent or mitigate security breaches or improper access to or disclosure of such information could have similarly adverse consequences for us. If we are unable to prevent or mitigate the impact of such security or data privacy breaches, we could be exposed to litigation and governmental investigations, which could lead to a potential disruption to our business. We depend on sophisticated information technology systems to operate our business and a cyber- attack or other breach of these systems could have a material adverse effect on our business. We rely on information technology systems that we or our third- party vendors operate to process, transmit and store electronic information in our day- to- day operations. The size and complexity of our information technology systems makes them vulnerable to a cyber- attack, malicious intrusion, breakdown, destruction, loss of data privacy or other significant disruption. A successful attack could result in the theft or destruction of intellectual property, data, or other misappropriation of assets, or otherwise compromise our confidential or proprietary information and disrupt our ~~- 42 -~~ operations. Cyber- attacks are becoming more sophisticated and frequent. We have invested in our systems and the protection and

recoverability of our data to reduce the risk of an intrusion or interruption, and we monitor and test our systems on an ongoing basis for any current or potential threats. There can be no assurance that these measures and efforts will prevent future interruptions or breakdowns. If we or our third- party vendors fail to maintain or protect our information technology systems and data integrity effectively or fail to anticipate, plan for or manage significant disruptions to these systems, we or our third- party vendors could have difficulty preventing, detecting and controlling such cyber- attacks and any such attacks could result in losses described above as well as disputes with physicians, patients and our partners, regulatory sanctions or penalties, increases in operating expenses, expenses or lost revenues or other adverse consequences, any of which could have a material adverse effect on our business, results of operations, financial condition, prospects and cash flows. **- 44-** Our information technology systems could face serious disruptions that could adversely affect our business. Our information technology and other internal infrastructure systems, including corporate firewalls, servers, leased lines and connection to the internet, face the risk of systemic failure that could disrupt our operations. A significant disruption in the availability of our information technology and other internal infrastructure systems could cause interruptions and delays in our research and development work. If we do not comply with laws regulating the protection of the environment and health and human safety, our business could be adversely affected. Our research, development and manufacturing involves the use of hazardous materials and various chemicals. We maintain quantities of various flammable and toxic chemicals in our facilities that are required for our research, development and manufacturing activities. We are subject to federal, state and local laws and regulations governing the use, manufacture, storage, handling and disposal of these hazardous materials. We believe our procedures for storing, handling and disposing of these materials in our facilities comply with the relevant guidelines of the state of California and the Occupational Safety and Health Administration of the U. S. Department of Labor. Although we believe that our safety procedures for handling and disposing of these materials comply with the standards mandated by applicable regulations, the risk of accidental contamination or injury from these materials cannot be eliminated. If an accident occurs, we could be held liable for resulting damages, which could be substantial. We are also subject to numerous environmental, health and workplace safety laws and regulations, including those governing laboratory procedures, exposure to blood- borne pathogens and the handling of animals and biohazardous materials. 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 these materials, this insurance may not provide adequate coverage against potential liabilities. Although we have some environmental liability insurance covering certain of our facilities, we may not maintain adequate insurance for all environmental liability or toxic tort claims that may be asserted against us in connection with our storage or disposal of biological or hazardous materials. Additional federal, state and local laws and regulations affecting our operations may be adopted in the future. We may incur substantial costs to comply with, and substantial fines or penalties if we violate, any of these laws or regulations. Our current operations are concentrated in one location, and we or the third parties upon whom we depend may be adversely affected by natural or other disasters and our business continuity and disaster recovery plans may not adequately protect us from a serious disaster. Our current operations are concentrated in the San Francisco Bay Area. Any unplanned event, such as flood, fire, explosion, extreme weather condition, medical epidemics, power shortage, telecommunication failure or other natural or manmade accidents or incidents that result in us being unable to fully utilize our facilities or the manufacturing facilities of our third- party contract manufacturers, or lose our repository of blood- based and other valuable laboratory samples, may have a material and adverse effect on our ability to operate our business, particularly on a daily basis, and have significant negative consequences on our financial and operating conditions. Loss of access to these facilities may result in increased costs, delays in the development of our product candidates or interruption of our business operations. Natural disasters such as earthquakes or wildfires, both of which are prevalent in Northern California, floods or tsunamis could further disrupt our operations, and have a material negative impact on our business, financial condition, results of operations and prospects. If a natural disaster, power outage or other event occurred that prevented us from using all or a ~~- 43 -~~ significant portion of our headquarters, that damaged critical infrastructure, such as our research facilities or the manufacturing facilities of our third- party contract manufacturers, or that otherwise disrupted operations, it may be difficult or, in certain cases, impossible, for us to continue our business for a substantial period of time. The disaster recovery and business continuity plans we have in place may prove inadequate in the event of a serious disaster or similar event. We may incur substantial expenses as a result of the limited nature of our disaster recovery and business continuity plans, which could have a material adverse effect on our business. As part of our risk management policy, we maintain insurance coverage at levels that we believe are appropriate for our business. However, in the event of an accident or incident at these facilities, we cannot assure you that the amounts of insurance will be sufficient to satisfy any damages and losses. If our facilities, or the manufacturing facilities of our third- party contract manufacturers, are unable to operate because of an accident or incident or for any other reason, even for a short period of time, any or all of **- 45-** our research and development programs may be harmed. Any business interruption may have a material and adverse effect on our business and financial condition. Risks Related to Our Intellectual PropertyIf we are unable to obtain or protect intellectual property rights related to our technology and current or future product candidates, or if our intellectual property rights are inadequate, we may not be able to compete effectively. Our success depends in part on our ability to obtain and maintain protection for our owned and in- licensed intellectual property rights and proprietary technology. We rely on patents and other forms of intellectual property rights, including in- licenses of intellectual property rights and biologic materials of others, to protect our current or future discovery platform, product candidates, methods used to manufacture our current or future product candidates, and methods for treating patients using our current or future product candidates. We in- license exclusive rights, including patents and patent applications relating to our discovery platform, from the Board of Trustees of the Leland Stanford Junior University, or Stanford University. Patent applications for this in- licensed technology are still pending before the U. S. Patent and Trademark Office and other national patent offices. There is no guarantee that such patent applications will issue as patents, nor any guarantee that **any** issued patents **that we have or may obtain** will provide adequate protection for the in- licensed

technology or any meaningful competitive advantage. We also own several patents and applications on our own technology relating to our discovery platform. There is no guarantee that any patents covering this technology will issue from the patent applications we own ~~,~~**.** ~~or~~ **Nor is there any guarantee** ~~, if they do,~~ that ~~the~~ issued ~~claims~~ **patents that we have or may obtain** will provide adequate protection for our discovery platform or any meaningful competitive advantage. We own ~~pending nonprovisional~~ **a U. S. patent and** patent applications **pending before the U. S. Patent and Trademark Office and other national patent offices** in connection with ATRC- 101 and related antibody variants **. We also have filed non- provisional patent applications related to other product candidates** . However, there is no guarantee that **such** ~~any current or future~~ patent applications will ~~result in the issuance~~ --- **issue** ~~of~~ **as patents, nor any guarantee that issued** patents that **we have or may obtain** will effectively protect ATRC- 101 or other product candidates or will effectively prevent others from commercializing competitive products. We have filed and may also file additional provisional patent applications in the United Stated related to our product candidates. A provisional patent application is not eligible to become an issued patent until, among other things, we file a non- provisional patent application within 12 months of the filing date of the provisional patent application. If we do not timely file non- provisional patent applications for our potential future provisional patent applications, we may lose our priority date with respect to our provisional patent applications and any patent protection on the inventions disclosed in our provisional patent applications. The patent prosecution process is expensive, complex and time- consuming. Patent license negotiations also can be complex and protracted, with uncertain results. We may not be able to file, prosecute, maintain, enforce or license all necessary or desirable patents and patent applications at a reasonable cost or in a timely manner. It is also possible that we will fail to identify patentable aspects of our research and development output before it is too late to obtain patent protection. The patent applications that we own or in- license may fail to result in issued patents, and, even if they do issue as patents, such patents may not cover our current or future technologies or product candidates in the United States or in other countries or provide sufficient protection from competitors. In addition, the coverage claimed in a patent ~~--44--~~application can be significantly reduced before the patent is issued and its scope can be reinterpreted after issuance. Accordingly, we also rely on our ability to preserve our trade secrets, to prevent third parties from infringing, misappropriating or violating our proprietary rights and to operate without infringing, misappropriating, or violating the proprietary rights of others. Further, although we make reasonable efforts to ensure patentability of our inventions, we cannot guarantee that all of the potentially relevant prior art relating to our owned or in- licensed patents and patent applications has been found. For example, publications of discoveries in scientific literature often lag behind the actual discoveries, and patent **- 46-** applications in the United States and other jurisdictions are typically not published until 18 months after filing, and in some cases not at all. Additionally, pending patent applications that have been published can, subject to certain limitations, be later amended in a manner that could cover our discovery platform, our product candidates, or the use of our technologies. We thus cannot know with certainty whether we or our licensors were the first to make the inventions claimed in our owned or in- licensed patents or pending applications, or that we or our licensors were the first to file for patent protection of such inventions. There is no assurance that all potentially relevant prior art relating to our owned or in- licensed patents and patent applications has been found. For this reason, and because there is no guarantee that any prior art search is absolutely correct and comprehensive, we may be unaware of prior art that could be used to invalidate an issued patent or to prevent our owned or in- licensed pending patent applications from issuing as patents. Invalidation of any of our patent rights, including in- licensed patent rights, could materially harm our business. Moreover, the patent positions of biopharmaceutical companies are generally uncertain because they may involve complex legal and factual considerations that have, in recent years, been the subject of legal development and change. As a result, the issuance, scope, validity, enforceability and commercial value of our pending patent rights is uncertain. The standards applied by the United States Patent and Trademark Office, or USPTO, and foreign patent offices in granting patents are not always certain and moreover, are not always applied uniformly or predictably. For example, there is no uniform worldwide policy regarding patentable subject matter or the scope of claims allowable in patents. Changes in either the patent laws or interpretation of the patent laws in the United States and other countries may diminish the value of our owned or in- licensed patents or narrow the scope of our patent protection. Even if patents do successfully issue and even if such patents cover our current or any future technologies or product candidates, third parties may challenge their validity, enforceability or scope, which may result in such patents being narrowed, invalidated, or held unenforceable. Any successful challenge to these patents or any other patents owned by or licensed to us could deprive us of rights necessary for the successful commercialization of any current or future technologies or product candidates that we may develop. Likewise, if patent applications we own or have in- licensed with respect to our development programs and current or future technologies or product candidates fail to issue, if their breadth or strength is threatened, or if they fail to provide meaningful exclusivity, other companies could be dissuaded from collaborating with us to develop current or future technologies or product candidates. Lack of valid and enforceable patent protection could threaten our ability to commercialize current or future products and could prevent us from maintaining exclusivity with respect to the invention or feature claimed in the patent applications. Any failure to obtain or any loss of patent protection could have a material adverse impact on our business and ability to achieve profitability. We may be unable to prevent competitors from entering the market with a product that is similar to or the same as ATRC- 101 or future product candidates. The filing of a patent application or the issuance of a patent is not conclusive as to its ownership, inventorship, scope, patentability, validity or enforceability. Issued patents and patent applications may be challenged in the courts and in the patent office in the United States and abroad. For example, our applications or applications filed by our licensors may be challenged through third- party submissions, opposition or derivation proceedings. By further example, our issued patents or the issued patents we in- license may be challenged through reexamination, inter partes review or post- grant review proceedings before the patent office, or in declaratory judgment actions or counterclaims. An adverse determination in any such submission, proceeding or litigation could prevent the issuance of, reduce the scope of, invalidate or render unenforceable our owned or in- licensed patent rights; limit our ability to stop others from using or commercializing similar or identical platforms and products;

allow third parties to compete directly with us without payment to us; or result in our inability to manufacture or commercialize products without infringing third- party patent rights. In addition, if the breadth or strength of protection provided by our owned or in- licensed patents and patent applications is threatened, it could dissuade companies from collaborating with us to license, develop or commercialize ~~- 45-~~ current or future platforms or product candidates. Any of the foregoing could have a material adverse effect on our business, financial condition, results of operations and prospects. Moreover, some of our owned and in-licensed patents and patent applications are or may in the future be co- owned with third parties. If we are unable to obtain an exclusive license to any such third party co- owners' interest in such patents or patent application, such co- owners may be able to license their rights to other third- parties, including our competitors, and our competitors could market competing products and technology. We may need the cooperation of any such co- owners of our patents to enforce such patents against third parties, and such cooperation may not be provided to **- 47-** us. Any of the foregoing could have a material adverse effect on our competitive position, business prospects and financial conditions. Our in- licensed patent rights may be subject to a reservation of rights by one or more third parties. For example, we in- license certain patent rights from Stanford University, which co-owns rights with a governmental entity. As a result, the U. S. government may have certain rights, including so- called march- in rights, to such patent rights and any products or technology developed from such patent rights. When new technologies are developed with U. S. government funding, the U. S. government generally obtains certain rights in any resulting patents, including a nonexclusive license authorizing the U. S. government to use the invention for non- commercial purposes. These rights may permit the U. S. government to disclose our confidential information to third parties and to exercise march- in rights to use or to allow third parties to use our licensed technology. The U. S. government can exercise its march- in rights if it determines that action is necessary because we fail to achieve the practical application of government- funded technology, because action is necessary to alleviate health or safety needs, to meet requirements of federal regulations, or to give preference to U. S. industry. In addition, our rights in such inventions may be subject to certain requirements to manufacture products embodying such inventions in the United States. Any exercise by the U. S. government of such rights could harm our competitive position, business, financial condition, results of operations and prospects. If we fail to comply with our obligations under any license, collaboration or other intellectual property- related agreements, we may be required to pay damages and could lose intellectual property rights that may be necessary for developing, commercializing and protecting our current or future technologies or product candidates or we could lose certain rights to grant sublicenses. We are heavily reliant upon in-licenses to certain patent rights and proprietary technology from third parties that are important or necessary to our discovery platform and development of product candidates. For example, we rely on an intellectual property license from Stanford University for our discovery platform. Our current license agreements impose, and any future license agreements we enter into are likely to impose, various development, commercialization, funding, milestone, royalty, diligence, sublicensing, insurance, patent prosecution and enforcement or other obligations on us. If we breach any of these obligations, or use the intellectual property licensed to us in an unauthorized manner, we may be required to pay damages and the licensor may have the right to terminate the license. License termination could result in our inability to develop, manufacture and sell products that are covered by the licensed technology or could enable a competitor to gain access to the licensed technology. In certain circumstances, our licensed patent rights are subject to our reimbursing our licensors for their patent prosecution and maintenance costs. For example, our license agreement with Stanford University requires us to bear the costs of filing and maintaining patent applications. Furthermore, we may not have the right to control the preparation, filing, prosecution, maintenance, enforcement and defense of patents and patent applications that we license from third parties. For example, pursuant to our license agreement with Stanford University, while we direct and are responsible for the preparation, filing, prosecution and maintenance, and, in certain circumstances, enforcement and defense of the patents and patent applications, all of these actions are subject to Stanford University' s final approval. Given Stanford University' s right of final approval, we therefore cannot be certain that these patents and patent applications will be prepared, filed, prosecuted, maintained, enforced and defended in a manner consistent with the best interests of our business. If our licensors and future licensors fail to prosecute, maintain, enforce and defend patents we may license, or lose rights to licensed patents or patent applications, our license rights may be reduced or eliminated. In such circumstances, our right ~~- 46-~~ to develop and commercialize any of our products or product candidates that is the subject of such licensed rights could be materially adversely affected. 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, misappropriating or otherwise violating the licensor' s intellectual property rights. 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 infringement or misappropriation were found, those amounts could be significant. The amount of our future royalty obligations will depend on the technology **- 48-** 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 addition, the agreements under which we currently license intellectual property or technology from third parties 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 impact on our business and ability to achieve profitability. Moreover, if disputes over intellectual property that we have licensed prevent or impair our ability to maintain our current licensing arrangements on commercially acceptable terms, we may be unable to successfully develop and commercialize any affected product candidates, which could have a material adverse effect on our business and financial conditions. Patent terms may not be able to protect our competitive position for an adequate period of time with respect to our current or future technologies or product candidates. Patents have a limited lifespan. In the United States, the standard patent term is typically 20 years after filing. Various extensions may be available. Even so, the life of a patent and the protection it affords are limited. As a result, our owned and in-

licensed patent portfolio provides us with limited rights that may not last for a sufficient period of time to exclude others from commercializing products similar or identical to ours. For example, given the large amount of time required for the research, development, testing and regulatory review of new product candidates, patents protecting such candidates might expire before or shortly after such candidates are commercialized. Extensions of patent term are available, but there is no guarantee that we would succeed in obtaining any particular extension — and no guarantee any such extension would confer patent term for a sufficient period of time to exclude others from commercializing products similar or identical to ours. In the United States, the Drug Price Competition and Patent Term Restoration Act of 1984 permits a patent term extension of up to five years beyond the normal expiration of the patent, which is limited to the approved indication (or any additional indications approved during the period of extension). A patent term extension cannot extend the remaining term of a patent beyond 14 years from the date of product approval; only one patent may be extended; and extension is available for only those claims covering the approved drug, a method for using it, or a method for manufacturing it. The applicable authorities, including the FDA and the USPTO in the United States, and any equivalent regulatory authority in other countries, 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. An extension may not be granted or may be limited where there is, for example, a failure to exercise due diligence during the testing phase or regulatory review process, failure to apply within applicable deadlines, failure to apply before expiration of relevant patents, or some other failure to satisfy applicable requirements. If this occurs, our competitors may be able to launch their products earlier by taking advantage of our investment in development and clinical trials along with our clinical and preclinical data. This could have a material adverse effect on our business and ability to achieve profitability. Changes in U. S. patent law or the patent law of other countries or jurisdictions could diminish the value of patents in general, thereby impairing our ability to protect our current or any future technologies or product candidates. Changes in either the patent laws or interpretation of the patent laws in the United States or elsewhere could increase the uncertainties and costs surrounding the prosecution of patent applications and the enforcement or defense of issued patents. The United States has enacted and implemented wide- ranging patent reform legislation. On ~~- 47 -~~ September 16, 2011, the Leahy- Smith America Invents Act, or the Leahy- Smith Act, was signed into law, which could increase the uncertainties and costs surrounding the prosecution of our owned or in- licensed patent applications and the enforcement or defense of our owned or in- licensed 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, may affect patent litigation and switch the U. S. patent system from a ‘ ‘ first- to- invent’’ system to a ‘ ‘ first- to- file’’ system. Under a first- to- file system, assuming the other requirements for patentability are met, the first inventor to file a patent application generally will be entitled to the patent on an invention regardless of whether another inventor had made the invention earlier. These provisions also allow third- party submission of prior art to the USPTO **- 49-** during patent prosecution and set forth additional procedures to challenge the validity of a patent by the USPTO administered post grant proceedings, including derivation, reexamination, inter partes review, post- grant review and interference proceedings. The USPTO developed additional regulations and procedures to govern administration of the Leahy- Smith Act, and many of the substantive changes to patent law associated with the Leahy- Smith Act, and, in particular, the first- to- file provisions, became effective on March 16, 2013. Accordingly, it is not clear what, if any, impact the Leahy- Smith Act will have on the operation of our business. The Leahy- Smith Act and its implementation could increase the uncertainties and costs surrounding the prosecution of our owned or in- licensed patent applications and the enforcement or defense of our issued owned or in- licensed patents, all of which could have a material adverse impact on our business prospects and financial condition. As referenced above, for example, courts in the U. S. continue to refine the heavily fact- and- circumstance- dependent jurisprudence defining the scope of patent protection available for therapeutic antibodies, narrowing the scope of patent protection available in certain circumstances or weakening the rights of patent owners in certain situations. This creates uncertainty about our ability to obtain patents in the future and the value of such patents. We cannot provide assurance that future developments in U. S. Congress, the federal courts and the USPTO will not adversely impact our owned or in- licensed patents or patent applications. The laws and regulations governing patents could change in unpredictable ways that could weaken our and our licensors’ ability to obtain new patents or to enforce our existing owned or in- licensed patents and patents that we might obtain or in- license in the future. Similarly, changes in patent law and regulations in other countries or jurisdictions or changes in the governmental bodies that enforce them or changes in how the relevant governmental authority enforces patent laws or regulations may have a material adverse effect on our and our licensors’ ability to obtain new patents or to protect and enforce our owned or in- licensed patents or patents that we may obtain or in- license in the future. Other companies or organizations may challenge our or our licensors’ patent rights or may assert patent rights that prevent us from developing and commercializing our current or future products. As the field of antibody- based immunotherapeutics matures, patent applications are being processed by national patent offices around the world. There is uncertainty about which patents will issue, and, if they do, there is uncertainty as to when, to whom, and with what claims. In addition, third parties may attempt to invalidate our or our licensors’ intellectual property rights. Even if such rights are not directly challenged, disputes could lead to the weakening of our or our licensors’ intellectual property rights. Our defense against any attempt by third parties to circumvent or invalidate our intellectual property rights could be costly to us, could require significant time and attention of our management, and could have a material and adverse impact on our profitability, financial condition and prospects or ability to successfully compete. There are many issued and pending patents that claim aspects of our current or potential future product candidates and modifications that we may need to apply to our current or potential future product candidates. There are also many issued patents that claim antibodies or portions of antibodies that may be relevant for products we wish to develop. Further, we cannot guarantee that we are aware of all of patents and patent applications potentially relevant to our technology or products. We may not be aware of potentially relevant third- party patents or applications for several reasons. For example, U. S. applications filed before November 29, 2000, and certain U. S. applications filed after that date that will not be filed outside the

U. S. remain confidential until patents issue. Patent applications in the United States and elsewhere are 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. Therefore, patent applications covering our product ~~- 48 -~~candidates or platform technologies could have been filed by others without our knowledge. Additionally, pending patent applications that have been published can, subject to certain limitations, be later amended in a manner that could cover our platform, our product candidates or the use of our technologies. Thus, it is possible that one or more third parties will hold patent rights to which we will need a license, which may not be available on reasonable terms or at all. If such third parties refuse to grant us a license to such patent rights on reasonable terms or at all, we may be required to expend significant time and resources to redesign our technology, product candidates or the methods for manufacturing our product candidates, or to develop or license replacement **- 50-** technology, all of which may not be commercially or technically feasible. In such case, we may not be able to market such technology or product candidates and may not be able to perform research and development or other activities covered by these patents. This could have a material adverse effect on our ability to commercialize our product candidates and our business and financial condition. We may not be able to protect our intellectual property rights throughout the world, which could negatively impact our business. Filing, prosecuting and defending patents on current or future technologies or product candidates in all countries throughout the world would be prohibitively expensive. Competitors or other third parties may use our technologies in jurisdictions where we have not obtained patent protection to develop their own products and, further, may export infringing products to territories where we have patent protection or licenses but enforcement is not as strong as that in the United States. These products may compete with our products, and our patents or other intellectual property rights may not be effective or sufficient to prevent them from competing. Additionally, the laws of some foreign jurisdictions do not protect intellectual property rights to the same extent as the laws in the United States. Many companies have encountered significant difficulties in protecting and defending such rights in such jurisdictions. The legal systems of certain countries, including certain developing countries, do not favor the enforcement of patents and other intellectual property protection, particularly those relating to biotechnology, which could make it difficult for us to stop the infringement of our owned and in- licensed patents or the marketing of competing products in violation of our intellectual property and proprietary rights generally. Proceedings to enforce our owned or in- licensed intellectual property and proprietary rights in foreign jurisdictions could result in substantial costs and could divert our efforts and attention from other aspects of our business. Such proceedings could also put our owned or in- licensed patents at risk of being invalidated or interpreted narrowly, could put our owned or in- licensed patent applications at risk of not issuing, and could provoke third parties to assert claims against us or our licensors. We or our licensors may not prevail in any lawsuits or other adversarial proceedings that we or our licensors initiate, and the damages or other remedies awarded, if any, may not be commercially meaningful. Accordingly, our and our licensors' efforts to enforce such intellectual property and proprietary rights around the world may be inadequate to obtain a significant commercial advantage from the intellectual property that we develop or in- license. Further, many countries have compulsory licensing laws under which a patent owner may be compelled to grant licenses to third parties. In addition, many countries limit the enforceability of patents against government agencies or government contractors. In these countries, the patent owner may have limited remedies, which could materially diminish the value of its patents. If we or any of our licensors are forced to grant a license to third parties with respect to any patents relevant to our business, our competitive position in the relevant jurisdiction may be impaired and our business prospects may be materially adversely affected. Third parties may initiate legal proceedings alleging that we are infringing, misappropriating or violating their intellectual property rights, the outcome of which would be uncertain and could have a material adverse impact on the success of our business. Our commercial success depends, in part, upon our ability or the ability of our potential future collaborators to develop, manufacture, market and sell our current or any future product candidates and to use our proprietary technologies without infringing, misappropriating or violating the proprietary and intellectual property rights of third parties. The biotechnology and pharmaceutical industries are characterized by extensive and complex litigation regarding patents and other intellectual property rights. ~~- 49 -~~We or our licensors, or any future strategic partners, may be party to, or be threatened with, adversarial proceedings or litigation regarding intellectual property rights with respect to our current or any potential future product candidates and technologies, including derivation, reexamination, inter partes review, post- grant review or interference proceedings before the USPTO and similar proceedings in jurisdictions outside of the United States such as opposition proceedings. In some instances, we may be required to indemnify our licensors for the costs associated with any such adversarial proceedings or litigation. For example, we are obligated under our license agreement with Stanford University to indemnify, hold harmless and defend Stanford University for damages from any claim of any kind arising **- 51-** out of or related to the license agreement with Stanford University. Third parties may assert infringement claims against us, our licensors or our strategic partners based on existing patents or patents that may be granted in the future, regardless of their merit. There is a risk that third parties may choose to engage in litigation or other adversarial proceedings with us, our licensors or our strategic partners to enforce or otherwise assert their patent rights. Even if we believe such claims are without merit, a court of competent jurisdiction could hold that these third- party patents are valid, enforceable and infringed, which could have a material adverse impact on our ability to utilize our discovery platform or to commercialize our current or any future product candidates. In order to successfully challenge the validity of any such U. S. patent in federal court, we would need to overcome a presumption of validity by presenting clear and convincing evidence of invalidity. There is no assurance that a court of competent jurisdiction, even if presented with evidence we believe to be clear and convincing, would invalidate the claims of any such U. S. patent. Further, we cannot guarantee that we will be able to successfully settle or otherwise resolve such adversarial proceedings or litigation. If we are unable to successfully settle future claims on terms acceptable to us, we may be required to engage in or to continue costly, unpredictable and time- consuming litigation and may be prevented from or experience substantial delays in marketing our product candidates. If we, or our licensors, or any future strategic partners are found to infringe, misappropriate or violate a third- party patent or other intellectual property rights, we could be required to pay damages, including treble damages

and attorney' s fees, if we are found to have willfully infringed. In addition, we, or our licensors, or any future strategic partners may choose to seek, or be required to seek, a license from a third party, which may not be available on commercially reasonable terms, if at all. Even if a license can be obtained on commercially reasonable terms, the rights may be non- exclusive, which could give our competitors access to the same technology or intellectual property rights licensed to us, and we could be required to make substantial licensing and royalty payments. We also could be forced, including by court order, to cease utilizing, developing, manufacturing and commercializing our discovery platform or product candidates deemed to be infringing. We may be forced to redesign current or future technologies or products. Any of the foregoing could have a material adverse effect on our ability to generate revenue or achieve profitability and possibly prevent us from generating revenue sufficient to sustain our operations. In addition, we or our licensors may find it necessary to pursue claims or to initiate lawsuits to protect or enforce our owned or in- licensed patent or other intellectual property rights. The cost to us in defending or initiating any litigation or other proceeding relating to our owned or in- licensed patent or other intellectual property rights, even if resolved in our favor, could be substantial, and any litigation or other proceeding would divert our management' s attention. Such litigation or proceedings could materially increase our operating losses and reduce the resources available for development activities or any future sales, marketing or distribution activities. Some of our competitors may be able to more effectively to sustain the costs of complex patent litigation because they have substantially greater resources. Uncertainties resulting from the initiation and continuation of patent litigation or other proceedings could delay our research and development efforts and materially limit our ability to continue our operations. Furthermore, because of the substantial amount of discovery required in connection with certain such proceedings, there is a risk that some of our confidential information could be compromised by disclosure. 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, such announcements could have a material adverse effect on the price of our Class A common stock. If we or our licensors were to initiate legal proceedings against a third party to enforce a patent covering one of our product candidates or our technology, the defendant could counterclaim that such patent is invalid or unenforceable. In patent litigation in the United States, defendant counterclaims alleging invalidity or unenforceability are commonplace. Grounds for a validity challenge could be an alleged failure to meet any of several statutory requirements, for example, claiming patent- ineligible subject matter, lack of novelty, indefiniteness, lack of written description, non ~~- 50 -~~ enablement, anticipation or obviousness. Grounds for an unenforceability assertion could be an allegation that someone connected with prosecution of the patent withheld relevant information from the USPTO or made a misleading statement during prosecution. The outcome of such invalidity and unenforceability claims is unpredictable. With respect to the validity question, for example, we cannot be certain that there is no invalidating prior art of which we or our licensors and the patent examiner were unaware during prosecution. If a defendant were to prevail on a legal assertion of invalidity or unenforceability, we could lose at least part, and perhaps all, of the patent protection for one or more of our product candidates or certain aspects of our platform technology. Such a loss of patent protection could have a material **- 52-** adverse effect on our business, financial condition, results of operations and prospects. Patents and other intellectual property rights also will not protect our product candidates and technologies if competitors or third parties design around such product candidates and technologies without legally infringing, misappropriating or violating our owned or in- licensed patents or other intellectual property rights. Intellectual property rights of third parties could adversely affect our ability to commercialize our current or future technologies or product candidates, and we might be required to litigate or obtain licenses from third parties to develop or market our current or future technologies or product candidates, which may not be available on commercially reasonable terms or at all. Because the antibody landscape is still evolving, it is difficult to conclusively assess our freedom to operate without infringing, misappropriating or violating third- party rights. There are numerous companies that have pending patent applications and issued patents broadly covering antibodies generally or covering antibodies directed against the same targets as, or targets similar to, those we are pursuing. Our competitive position may materially suffer if patents issued to third parties or other third-party intellectual property rights cover our current or future technologies product candidates or elements thereof or our manufacture or uses relevant to our development plans. In such cases, we may not be in a position to develop or commercialize current or future technologies, product candidates unless we successfully pursue litigation to nullify or invalidate the third- party intellectual property right concerned, or enter into a license agreement with the intellectual property right holder, if available on commercially reasonable terms. There may be issued patents of which we are not aware, held by third parties that, if found to be valid and enforceable, could be alleged to be infringed by our current or future technologies or product candidates. There also may be pending patent applications of which we are not aware that may result in issued patents, which could be alleged to be infringed by our current or future technologies or product candidates. If such an infringement claim should successfully be brought, we may be required to pay substantial damages or be forced to abandon our current or future technologies or product candidates or to seek a license from any patent holders. No assurances can be given that a license will be available on commercially reasonable terms, if at all. Third party intellectual property right holders may also actively bring infringement, misappropriation or violation or other claims alleging violations of intellectual property rights against us. We cannot guarantee that we will be able to successfully settle or otherwise resolve such claims. If we are unable to successfully settle future claims on terms acceptable to us, we may be required to engage in or to continue costly, unpredictable and time- consuming litigation and may be prevented from or experience substantial delays in marketing our product candidates. If we fail in any such dispute, in addition to being forced to pay damages, we may be temporarily or permanently prohibited from commercializing any of our current or future technologies or product candidates that are held to be infringing, misappropriating or otherwise violating third-party intellectual property rights. We might, if possible, also be forced to redesign current or future technologies or product candidates so that we no longer infringe, misappropriate or violate the third- party intellectual property rights. Any of these events, even if we were ultimately to prevail, could require us to divert substantial financial and management resources that we would otherwise be able to devote to our business, which could have a material adverse effect on our financial condition and

results of operations. If we are unable to protect the confidentiality of our trade secrets, our business and competitive position would be harmed. As referenced above, in addition to seeking patent protection for certain aspects of our current or future technologies and product candidates, we also consider trade secrets, including confidential and unpatented know- how, important to the maintenance of our competitive position. However, trade secrets and know- how can be difficult to protect. We protect and plan to protect trade secrets and confidential and unpatented know- how, in part, by entering into ~~- 51 -~~ non-disclosure and confidentiality agreements with parties who have access to such knowledge, such as our employees, corporate collaborators, outside scientific collaborators, CROs, contract manufacturers, consultants, advisors and other third parties. We also enter into confidentiality and invention or patent assignment agreements with our employees and consultants under which they are obligated to maintain confidentiality and to assign their inventions to us. Despite these efforts, we may not obtain these agreements in all circumstances. Moreover, individuals with whom we have such agreements may not comply with their terms. Any of these parties may breach such agreements and disclose our proprietary information, including our trade secrets, and we may not be able to obtain adequate remedies for any such **- 53 -** breaches. We may also become involved in inventorship disputes relating to inventions and patents developed by our employees or consultants under such agreements. Enforcing a claim that a party illegally disclosed or misappropriated a trade secret, or securing title to an employee- or consultant- developed invention if a dispute arises, is difficult, expensive and time- consuming, and the outcome is unpredictable. In addition, some courts in the United States and certain foreign jurisdictions disfavor or are unwilling to protect trade secrets. Further, if any of our trade secrets were to be lawfully obtained or independently developed by a competitor, we would have no right to prevent that competitor from using the technology or information to compete with us. If any of our trade secrets were to be disclosed to or independently developed by a competitor, our competitive position would be materially and adversely harmed. We may be subject to claims that we or our employees or consultants have wrongfully used or disclosed alleged trade secrets or other proprietary information of our employees' or consultants' former employers or their clients. Many of our employees or consultants and our licensors' employees or consultants were previously employed at universities or biotechnology or biopharmaceutical companies, including our competitors or potential competitors. We may be subject to claims that one or more of these employees or consultants or we have inadvertently or otherwise used or disclosed trade secrets or other proprietary information of former employers. Litigation or arbitration may be necessary to defend against these claims. If we fail in defending such claims, in addition to paying monetary damages, we may lose valuable intellectual property rights or personnel or may be enjoined from using such intellectual property. Any such proceedings and possible aftermath would likely divert significant resources from our core business, including distracting our technical and management personnel from their normal responsibilities. A loss of key research personnel or their work product could limit our ability to commercialize, or prevent us from commercializing, our current or future technologies or product candidates, which could materially harm our business. Even if we are successful in defending against any such claims, litigation or arbitration could result in substantial costs and could be a distraction to management. Obtaining and maintaining our patent protection depends on compliance with various procedural, document submission, fee payment and other requirements imposed by government patent agencies, and our patent protection could be reduced or eliminated for non- compliance with these requirements. Periodic maintenance fees, renewal fees, annuity fees and various other government fees on patents or applications will be due to be paid to the USPTO and various government patent agencies outside of the United States over the lifetime of our owned and in- licensed patents or applications and any patent rights we may own or in- license in the future. The USPTO and various non- U. S. government patent agencies require compliance with several procedural, documentary, fee payment and other similar provisions during the patent application process. We employ reputable law firms and other professionals to help us comply with these requirements, and we are also dependent on our licensors to take the necessary action to comply with these requirements with respect to our in- licensed intellectual property. In many cases, an inadvertent lapse can be cured by payment of a late fee or by other means in accordance with the applicable rules. There are situations, however, in which non- compliance can result in abandonment or lapse of the patent or patent application, resulting in partial or complete loss of patent rights in the relevant jurisdiction. In such an event, potential competitors might be able to enter the market with similar or identical products or platforms, which could have a material adverse effect on our business prospects and financial condition. 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. Our trademarks or trade names may be challenged, infringed, circumvented, declared generic or 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 ~~- 52 -~~ forced to stop using these names, which we use for name recognition by potential partners or customers in our markets of interest. 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 materially adversely affected. **- 54 -** Intellectual property rights do not necessarily address all potential threats to our business. 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. The following examples are illustrative: others may be able to make compounds or formulations that are similar to our product candidates, but that are not covered by the claims of any patents that we own, license or control; we or any strategic partners might not have been the first to make the inventions covered by the issued patents or pending patent applications that we own, license or control; we or our licensors might not have been the first to file patent applications covering certain of our owned and in- licensed inventions; others may independently develop the same, similar, or alternative technologies without infringing, misappropriating or violating our owned or in- licensed intellectual property rights; it is possible that our owned or in-licensed pending patent applications will not lead to issued patents; issued patents that we own, in- license, or control may not provide us with any competitive advantages, or may be narrowed or held invalid or unenforceable, including as a result of legal challenges; our competitors might conduct research and development activities in the United States and other countries that provide a safe harbor from patent infringement claims for certain research and development activities, as well as in

countries where we do not have patent rights, and may then use the information learned from such activities to develop competitive products for sale in our major commercial markets; we may choose not to file a patent in order to maintain certain trade secrets or know- how, and a third party may subsequently file a patent covering such trade secrets or know- how; and the patents of others may have an adverse effect on our business. Should any of these events occur, they could have a material adverse impact on our business and financial condition. Risks Related to Government RegulationClinical development includes a lengthy and expensive process with an uncertain outcome, and results of earlier studies and trials may not be predictive of future trial results. Our only product candidate, ATRC- 101, is in early clinical development and its risk of failure is high. It is impossible to predict when or if ATRC- 101 or any potential future product candidates will prove effective and safe in humans or will receive regulatory approval. Before obtaining marketing approval from regulatory authorities for the sale of any product candidate, we must complete preclinical studies and then conduct extensive clinical trials to demonstrate the safety and efficacy of that product candidate in humans. Clinical testing is expensive and can take many years to complete, and its outcome is inherently uncertain. Failure can occur at any time during the development process. The results of preclinical studies and early clinical trials of any of our current or potential future product candidates may not be predictive of the results of later- stage clinical trials. Product candidates in later stages of clinical trials may fail to show the desired safety and efficacy traits despite having progressed through preclinical studies and initial clinical trials. A number of companies in the pharmaceutical industry have suffered significant setbacks in advanced clinical trials due to lack of efficacy or safety profiles, notwithstanding promising results in earlier trials. We may experience delays in completing our preclinical studies and initiating or completing clinical trials of ATRC- 101 or potential future product candidates. We do not know whether planned preclinical studies and clinical trials will be completed on schedule or at all, or whether planned clinical trials will begin on time, need to be redesigned, enroll patients on time or be completed on schedule, if at all. Our development programs may be delayed for a variety of reasons, including delays related to: ~~- 53-~~ the FDA or other regulatory authorities requiring us to submit additional data or imposing other requirements before permitting us to initiate a clinical trial; obtaining regulatory approval to commence a clinical trial; **- 55-** reaching agreement on acceptable terms with prospective CROs and clinical trial sites, the terms of which can be subject to extensive negotiation and may vary significantly among different CROs and clinical trial sites; obtaining institutional review board, or IRB, approval at each clinical trial site; recruiting suitable patients to participate in a clinical trial; having patients complete a clinical trial or return for post- treatment follow- up; clinical trial sites deviating from trial protocol or dropping out of a trial; adding new clinical trial sites; or manufacturing sufficient quantities of our product candidates for use in clinical trials. Furthermore, we expect to rely on our CROs and clinical trial sites to ensure the proper and timely conduct of our clinical trials and, while we expect to enter into agreements governing their committed activities, we have limited influence over their actual performance. We could encounter delays if prescribing physicians encounter unresolved ethical issues associated with enrolling patients in clinical trials of our current or potential future product candidates in lieu of prescribing existing treatments that have established safety and efficacy profiles. Further, a clinical trial may be suspended or terminated by us, our partners, the IRBs of the institutions in which such trials are being conducted, the Data Safety Monitoring Board for such trial or by the FDA or other regulatory authorities 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 authorities resulting in the imposition of a clinical hold, unforeseen safety issues or adverse side effects, failure to demonstrate a benefit from using a drug or therapeutic biologic, changes in governmental regulations or administrative actions or lack of adequate funding to continue the clinical trial. If we experience delays in the completion of, or termination of, any clinical trial of any of our current or potential future product candidates, the commercial prospects of such product candidate will be harmed, and our ability to generate product revenue from such product candidates will be delayed. In addition, any delays in completing our clinical trials will increase our costs, slow our product development and approval process and jeopardize our ability to commence product sales and generate revenue. Any of these occurrences may materially and adversely affect our business, financial condition, results of operations and prospects. In addition, many of the factors that cause, or lead to, a delay in the commencement or completion of clinical trials may also ultimately lead to the denial of regulatory approval of our current or potential future product candidates. We may be unable to obtain U. S. or foreign regulatory approval and, as a result, be unable to commercialize ATRC- 101 or potential future product candidates. ATRC- 101 and any potential future product candidates are subject to extensive governmental regulations relating to, among other things, research, testing, development, manufacturing, safety, efficacy, approval, recordkeeping, reporting, labeling, storage, packaging, advertising and promotion, pricing, marketing and distribution of drugs and therapeutic biologics. Rigorous preclinical testing and clinical trials and an extensive regulatory approval process are required to be successfully completed in the U. S. and in many foreign jurisdictions before a new drug or therapeutic biologic can be marketed. Satisfaction of these and other regulatory requirements is costly, time- consuming, uncertain and subject to unanticipated delays. It is possible that none of the product candidates we may develop will obtain the regulatory approvals necessary for us or our potential future partners to begin selling them. We have very limited experience in conducting and managing the clinical trials necessary to obtain regulatory approvals, including approval by the FDA. The time required to obtain FDA and other approvals is unpredictable but typically takes many years following the commencement of clinical trials, depending upon the type, complexity and novelty of the product candidate. The standards that the FDA and its foreign counterparts use when regulating us require judgment and can change, which makes it difficult to predict with certainty how they will be applied. Any analysis we perform of data from preclinical and clinical activities is subject to confirmation and interpretation by regulatory authorities, which could delay, limit or prevent regulatory approval. We may also encounter unexpected delays or ~~- 54-~~ increased costs due to new government regulations, for example, from future legislation or administrative action, or from changes in FDA policy during the period of product development, clinical trials and FDA regulatory review. It is **- 56-** impossible to predict whether legislative changes will be enacted, or whether FDA or foreign regulations, guidance or interpretations will be changed, or what

the impact of such changes, if any, may be. Because ATRC- 101 or potential future product candidates we are developing may work through mechanisms of action or work against targets with which the FDA has limited early experience, the FDA and its foreign counterparts have not yet established any definitive policies, practices or guidelines in relation to these product candidates. While we believe these product candidates are regulated as therapeutic biologics that are subject to requirements for review and approval of a Biologics License Application, or BLA, by the FDA, the lack of policies, practices or guidelines may hinder or slow review by the FDA of any regulatory filings that we may submit. Moreover, the FDA may respond to these submissions by defining requirements we may not have anticipated. Such responses could lead to significant delays in the clinical development of these product candidates, including ATRC- 101. In addition, because there may be approved treatments for some of the diseases for which we may seek approval, in order to receive regulatory approval, we may need to demonstrate through clinical trials that the current or potential future product candidates we develop to treat these diseases, if any, are not only safe and effective, but safer or more effective than existing products. Any delay or failure in obtaining required approvals could have a material and adverse effect on our ability to generate revenue from the particular product candidate for which we are seeking approval. Further, we and our potential future partners may never receive approval to market and commercialize any product candidate. Even if we or a potential future partner obtains regulatory approval, the approval may be for targets, disease indications or patient populations that are not as broad as we intended or desired or may require labeling that includes significant use or distribution restrictions or safety warnings. We or a potential future partner may be subject to post- marketing testing requirements to maintain regulatory approval. If ATRC- 101 or any of our potential future product candidates prove to be ineffective, unsafe or commercially unviable, we may have to re- engineer ATRC- 101 or our potential future product candidates, and our entire pipeline could have little, if any, value, which could require us to change our focus and approach to antibody discovery and development, which would have a material and adverse effect on our business, financial condition, results of operations and prospects. We are also subject to numerous foreign regulatory requirements governing, among other things, the conduct of clinical trials, manufacturing and marketing authorization, pricing and third- party reimbursement. The foreign regulatory approval process varies among countries and may include all of the risks associated with FDA approval described above as well as risks attributable to the satisfaction of local regulations in foreign jurisdictions. Moreover, the time required to obtain approval may differ from that required to obtain FDA approval. Approval by the FDA does not ensure approval by regulatory authorities outside the United States and vice versa. Even if we receive regulatory approval for any of our current or potential future product candidates, we will be subject to ongoing regulatory obligations and continued regulatory review, which may result in significant additional expense. Additionally, our current or potential 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 or potential future partners obtain for ATRC- 101 or any potential future product candidate may also be subject to limitations on the approved indicated uses for which a 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 such product candidate. In addition, if the FDA or other regulatory authority approves ATRC- 101 or any potential future product candidate, the manufacturing processes, labeling, packaging, distribution, adverse event reporting, storage, import, export, advertising, promotion and recordkeeping for such 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 cGMP and good clinical practices 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, or with our third- party manufacturers or manufacturing processes, or failure to comply with regulatory requirements, may result in, among other things:- ~~55~~ **57** - restrictions on the marketing or manufacturing of the product, withdrawal of the product from the market or voluntary or mandatory product recalls; 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; suspension or revocation of product license approvals; product seizure or detention or refusal to permit the import or export of products; and injunctions or the imposition of civil or criminal penalties. The FDA’ s policies may change and additional government regulations may be enacted that could prevent, limit or delay regulatory approval of our product candidates. We cannot predict the likelihood, nature or extent of government regulation that may arise from future legislation or administrative action, either in the United States or abroad. If we are slow or unable to adapt to changes in existing requirements or the adoption of new requirements or policies, or if we are not able to maintain regulatory compliance, we may lose any marketing approval that we may have obtained and we may not achieve or sustain profitability, which would adversely affect our business. We may attempt to secure approval from the FDA through the use of accelerated registration pathways. If unable to obtain approval under an accelerated pathway, we may be required to conduct additional preclinical studies or clinical trials which could increase the expense of obtaining, reduce the likelihood of obtaining or delay the timing of obtaining, necessary marketing approvals. Even if we receive **approval for** accelerated ~~approval~~ **registration pathways** from the FDA, if our confirmatory trials do not verify clinical benefit, or if we do not comply with rigorous post- marketing requirements, the FDA may seek to withdraw accelerated approval. We may seek an accelerated approval development pathway for our product candidates, including ATRC- 101. Under the accelerated approval provisions of the Federal Food, Drug, and Cosmetic Act, or the FDCA, and the FDA’ s implementing regulations, the FDA may grant accelerated approval to a product designed to treat a serious or life- threatening condition that provides meaningful therapeutic advantage over available therapies and demonstrates an effect on a surrogate endpoint or intermediate clinical endpoint that is reasonably likely to predict clinical benefit. The FDA considers a clinical benefit to be a positive therapeutic effect that is clinically meaningful in the context of a given disease. For the purposes of accelerated approval, a surrogate endpoint is a marker, such as a laboratory measurement, radiographic image, physical sign or other measure that is thought to predict clinical benefit but is not itself a measure of clinical benefit. An

intermediate clinical endpoint is a clinical endpoint that can be measured earlier than an effect on irreversible morbidity or mortality that is reasonably likely to predict an effect on irreversible morbidity or mortality or other clinical benefit. The accelerated approval development pathway may be used in cases in which the advantage of a new drug over available therapy may not be a direct therapeutic advantage, but is a clinically important improvement from a patient and public health perspective. If granted, accelerated approval is contingent on the sponsor' s agreement to conduct, in a diligent manner, additional post- approval confirmatory studies to verify and describe the drug' s clinical profile or risks and benefits for accelerated approval. The FDA may require that any such confirmatory study be initiated or substantially underway prior to the submission of an application for accelerated approval. If such post- approval studies fail to confirm the drug' s clinical profile or risks and benefits, the FDA may withdraw its approval of the drug. If we choose to pursue accelerated approval, we intend to seek feedback from the FDA or will otherwise evaluate our ability to seek and receive such accelerated approval. There can be no assurance that, after our evaluation of the feedback from the FDA or other factors, we will decide to pursue or submit a BLA for accelerated approval or any other form of expedited development, review or approval. Furthermore, if we submit an application for accelerated approval, there can be no assurance that such application will be accepted or that approval will be granted on a timely basis, or at all. The FDA also could require us to conduct further studies or trials prior to considering our application or granting approval of any type. We might not be able to fulfill the FDA' s requirements in a timely manner, which would cause delays, or approval might not be granted because our submission is deemed incomplete by the FDA. Even if we receive accelerated approval from the FDA, we will be subject to rigorous post- marketing requirements, including the completion of confirmatory post- market clinical trials to verify the clinical benefit of the product, and submission to the FDA of all promotional materials prior to their dissemination. The FDA could seek to withdraw accelerated approval for multiple reasons, including if we fail to conduct any required post- market study with- ~~56~~ **58** - due diligence; a post- market study does not confirm the predicted clinical benefit; other evidence shows that the product is not safe or effective under the conditions of use; or we disseminate promotional materials that are found by the FDA to be false and misleading. A failure to obtain accelerated approval or any other form of expedited development, review or approval for a product candidate that we may choose to develop would result in a longer time period prior to commercializing such product candidate, could increase the cost of development of such product candidate and could harm our competitive position in the marketplace. Healthcare legislative reform measures may have a material adverse effect on our business and results of operations. Third- party payors, whether domestic or foreign, or governmental or commercial, are developing increasingly sophisticated methods of controlling healthcare costs. Further, in the United States, there have been and continue to be a number of legislative initiatives to contain healthcare costs. For example, in March 2010, the Patient Protection and Affordable Care Act, as amended by the Health Care and Education Reconciliation Act, or collectively the ACA, was enacted, which substantially changed the way healthcare is financed by both governmental and private insurers, and significantly impacted the U. S. pharmaceutical industry. The ACA was intended to broaden access to health insurance, reduce or constrain the growth of healthcare spending, enhance remedies against fraud and abuse, add new transparency requirements for the healthcare and health insurance industries, impose new taxes and fees on the health industry and impose additional health policy reforms, and substantially changed the way healthcare is financed by both governmental and private insurers, and significantly impacts the U. S. pharmaceutical industry. In June 2021, the U. S. Supreme Court dismissed a challenge on procedural grounds that argued the ACA is unconstitutional in its entirety because the " individual mandate " was repealed by Congress. ~~Thus~~ **Further** , **the IRA, among** ~~the~~ **other things** ~~ACA will remain in effect in its current form. In addition~~ , **extends enhanced subsidies** ~~in January 2021, President Biden issued an executive order that initiated a special enrollment period~~ for ~~obtaining~~ **individuals purchasing** health insurance coverage **in ACA marketplaces** through **plan year 2025. The IRA also eliminates** ~~the ACA marketplace, and instructed certain governmental agencies to review and reconsider their~~ -- **the** ~~existing policies~~ **" donut hole " under the Medicare Part D program beginning in 2025 by significantly lowering the beneficiary maximum out- of- pocket cost** and ~~rules that limit access to healthcare~~ **through a newly established manufacturer discount program** . The ACA may be subject to additional judicial or Congressional challenges in the future. It is unclear how any such challenges and the healthcare reform measures of the Biden administration will impact the ACA and our business. Additionally, there has been heightened governmental scrutiny recently over the manner in which manufacturers set prices for their marketed products. For example, there have been several recent Congressional inquiries, Presidential executive orders, and proposed and enacted federal and state legislation designed to, among other things, bring more transparency to drug pricing, review the relationship between pricing and manufacturer patient programs, and reform government program reimbursement methodologies for drug products. At the federal level, in July 2021, the Biden administration released an executive order, " Promoting Competition in the American Economy, " with multiple provisions aimed at prescription drugs. In response to Biden' s executive order, on September 9, 2021, **the U. S. Department of Health and Human Services, or** HHS **,** released a Comprehensive Plan for Addressing High Drug Prices that outlines principles for drug pricing reform and sets out a variety of potential legislative policies that Congress could pursue to advance these principles. ~~No legislation or administrative actions have been finalized to implement these principles.~~ In addition, ~~Congress~~ **the IRA, among other things, (1) directs HHS to negotiate the price of certain single- source drugs and biologics covered under Medicare and (2) imposes rebates under Medicare Part B and Medicare Part D to penalize price increases that outpace inflation. These provisions will take effect progressively starting in fiscal year 2023, although they may be subject to legal challenges. It** is ~~considering~~ **currently unclear how the IRA will be implemented but it is likely to have a significant impact on the pharmaceutical industry. Further, the Biden administration released an additional executive order on October 14, 2022, directing HHS to report on how the Center for Medicare and Medicaid Innovation can be further leveraged to test new models for lowering** drug **costs for Medicare and Medicaid beneficiaries** ~~pricing as part of other reform initiatives~~ . At the state level, legislatures have increasingly passed legislation and implemented 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. These new laws and initiatives may result in additional reductions in Medicare and other healthcare funding, which could have a material adverse effect on our future customers and accordingly, our financial operations. ~~Further, it is possible that additional governmental action is taken in response to the ongoing COVID-~~ **59-** ~~19 pandemic.~~ We expect that additional state and federal healthcare reform measures will be adopted in the future, any of which could limit the amounts that federal and state governments will pay for healthcare products and services, which could result in reduced demand for our product candidates or additional pricing pressures. ~~- 57 -~~ If we or potential future partners, manufacturers or service providers fail to comply with healthcare laws and regulations, we or they could be subject to enforcement actions, which could result in significant penalties and affect our ability to develop, market and sell our products and may harm our reputation. Healthcare providers and third- party payors, among others, will play a primary role in the prescription and recommendation of any product candidates for which we obtain marketing approval. Our current and future arrangements with third- party payors, providers and customers, among others, may expose us to broadly applicable fraud and abuse and other healthcare laws and regulations that may constrain the business or financial arrangements and relationships through which we conduct our research as well as market, sell and distribute our product candidates for which we obtain marketing approval. Restrictions under applicable federal and state healthcare laws and regulations, include the following: the federal Anti- Kickback Statute, which prohibits, among other things, a person or entity from knowingly and willfully soliciting, offering, paying, receiving or providing remuneration, directly or indirectly, in cash or in kind, to induce or reward either the referral of an individual for, or the purchase, lease order, arranging for or recommendation of, any good, facility, item or service, for which payment may be made, in whole or in part, by a federal healthcare program, such as Medicare or Medicaid. A person or entity does not need to have actual knowledge of the statute or specific intent to violate it in order to have committed a violation. In addition, a violation of the Anti- Kickback Statute can form the basis for a violation of the federal False Claims Act (discussed below); federal civil and criminal false claims laws and civil monetary penalties laws, including the federal False Claims Act, which provides for civil whistleblower or qui tam actions, that impose penalties against individuals or entities for knowingly presenting, or causing to be presented, to the federal government, claims for payment that are false or fraudulent or making a false statement to avoid, decrease or conceal an obligation to pay money to the federal government. In addition, the government may assert that a claim including items and services resulting from a referral made in violation of the federal Anti- Kickback Statute constitutes a false or fraudulent claim for purposes of the False Claims Act; HIPAA, which imposes criminal and civil liability for, among other things, executing a scheme to defraud any healthcare benefit program, or knowingly and willfully falsifying, concealing or covering up a material fact or making any materially false statement in connection with the delivery of or payment for healthcare benefits, items or services. Similar to the federal Anti- Kickback Statute, a person or entity does not need 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 its implementing regulations, including the Final Omnibus Rule published in January 2013, which impose obligations on certain covered entity healthcare providers, health plans, and healthcare clearinghouses as well as their business associates and their covered subcontractors that perform certain services involving the use or disclosure of individually identifiable health information, including mandatory contractual terms, with respect to safeguarding the privacy, security and transmission of individually identifiable health information, and require notification to affected individuals and regulatory authorities of certain breaches of security of individually identifiable health information; the federal false statements statute, which prohibits knowingly and willfully falsifying, concealing or covering up a material fact or making any materially false statement in connection with the delivery of or payment for healthcare benefits, items or services; the federal transparency requirements known as the federal Physician Payments Sunshine Act, created as part of ACA, which requires certain manufacturers of drugs, devices, biologics and medical supplies for which payment is available under Medicare, Medicaid or the Children' s Health Insurance Program to report annually to **the Centers for Medicare & Medicaid Services, or** CMS information related to payments and other transfers of value made by that entity to physicians (defined to include doctors, dentists, optometrists, podiatrists and chiropractors), other healthcare professionals (such as physician assistants and **- 60-** nurse practitioners), and teaching hospitals, as well as ownership and investment interests held by physicians and their immediate family members; and analogous local, state and foreign laws and regulations, such as state anti- kickback and false claims laws that may apply to healthcare items or services reimbursed by third party payors, including private insurers; local, state and foreign transparency laws that require manufacturers to report information related to payments and transfers of value to other healthcare providers and healthcare entities, marketing ~~- 58 -~~ expenditures, or drug pricing; state laws that require pharmaceutical companies to register certain employees engaged in marketing activities in the location and comply with the pharmaceutical industry' s voluntary compliance guidelines and the relevant compliance guidance promulgated by the federal government; and state and foreign laws governing the privacy and security of health information in certain circumstances, many of which differ from each other in significant ways and often are not preempted by HIPAA, thus complicating compliance efforts. Ensuring that our future business arrangements with third parties comply with applicable healthcare laws and regulations could involve substantial costs. If our operations are found to be in violation of any such requirements, we may be subject to significant penalties, including criminal, administrative, and significant civil monetary penalties, damages, fines, individual imprisonment, disgorgement, contractual damages, reputational harm, exclusion from participation in government healthcare programs, integrity obligations, injunctions, recall or seizure of products, total or partial suspension of production, denial or withdrawal of pre- marketing product approvals, private qui tam actions brought by individual whistleblowers in the name of the government, refusal to allow us to enter into supply contracts, including government contracts, additional reporting requirements and oversight if subject to a corporate integrity agreement or similar 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. Although effective compliance

programs can mitigate the risk of investigation and prosecution for violations of these laws, these risks cannot be entirely eliminated. Any action against us for an alleged or suspected violation could cause us to incur significant legal expenses and could divert our management' s attention from the operation of our business, even if our defense is successful. In addition, achieving and sustaining compliance with applicable laws and regulations may be costly to us in terms of money, time and resources. If we fail to comply with U. S. and foreign regulatory requirements, regulatory authorities could limit or withdraw any marketing or commercialization approvals we may receive and subject us to other penalties that could materially harm our business. Even if we receive marketing and commercialization approval of a product candidate, we will be subject to continuing regulatory requirements, including in relation to adverse patient experiences with the product and clinical results that are reported after a product is made commercially available, both in the United States and any foreign jurisdiction in which we seek regulatory approval. The FDA has significant post- market authority, including the authority to require labeling changes based on new safety information and to require post- market studies or clinical trials to evaluate safety risks related to the use of a product or to require withdrawal of the product from the market. The FDA also has the authority to require a Risk Evaluation and Mitigation Strategy, or a REMS, after approval, which may impose further requirements or restrictions on the distribution or use of an approved drug or therapeutic biologic. The manufacturer and manufacturing facilities we use to make a future product, if any, will also be subject to periodic review and inspection by the FDA and other regulatory agencies, including for continued compliance with cGMP requirements. The discovery of any new or previously unknown problems with our third- party manufacturers, manufacturing processes or facilities may result in restrictions on the product, manufacturer or facility, including withdrawal of the product from the market. We intend to rely on third- party manufacturers, and we will not have control over compliance with applicable rules and regulations by such manufacturers. Any product promotion and advertising will also be subject to regulatory requirements and continuing regulatory review. If we or our existing or future partners, manufacturers or service providers fail to comply with applicable continuing regulatory requirements in the U. S. or foreign jurisdictions in which we seek to market our products, we or they may be subject to, among other things, fines, warning letters, holds on clinical trials, delay of approval or refusal by the FDA to approve pending applications or supplements to approved applications, suspension or withdrawal of regulatory approval, product recalls and seizures, administrative detention of products, refusal to permit the import or export of products, operating restrictions, injunction, civil penalties and criminal prosecution. **- 61-** Even if we are able to commercialize any product candidate, such product candidate may become subject to unfavorable pricing regulations or third- party coverage and reimbursement policies, which would harm our business. Our ability to commercialize any products successfully will depend, in part, on the extent to which coverage and adequate reimbursement for these products and related treatments will be available from third- party payors, such as ~~- 59-~~ government authorities, private health insurers and health maintenance organizations. Patients who are prescribed medications for the treatment of their conditions generally rely on third- party payors to reimburse all or part of the costs associated with their prescription drugs. Coverage and adequate reimbursement from government healthcare programs, such as Medicare and Medicaid, and private health insurers are critical to new product acceptance. Patients are unlikely to use our future products, if any, unless coverage is provided and reimbursement is adequate to cover a significant portion of the cost. Similar challenges to obtaining coverage and reimbursement for ~~to~~ our product candidates, once approved, will apply to our companion diagnostics. Cost- containment is a priority in the U. S. healthcare industry and elsewhere. As a result, government authorities and other third party payors have attempted to control costs by limiting coverage and the amount of reimbursement for particular medications. Increasingly, third party payors are requiring that drug companies provide them with predetermined discounts from list prices and are challenging the prices charged for medical products. Third- party payors also may request additional clinical evidence beyond the data required to obtain marketing approval, requiring a company to conduct expensive pharmacoeconomic studies in order to demonstrate the medical necessity and cost- effectiveness of its product. Commercial third- party payors often rely upon Medicare coverage policy and payment limitations in setting their reimbursement rates, but also have their own methods and approval process apart from Medicare determinations. Therefore, coverage and reimbursement for pharmaceutical products in the U. S. can differ significantly from payor to payor. We cannot be sure that coverage and adequate reimbursement will be available for any product that we commercialize and, if reimbursement is available, that the level of reimbursement will be adequate. Coverage and reimbursement may impact the demand for, or the price of, any product candidate for which we obtain marketing approval. If coverage and reimbursement are not available or are available only at limited levels, we may not be able to successfully commercialize any product candidate for which we obtain marketing approval. Further, coverage policies and third- party reimbursement rates may change at any time. Therefore, even if favorable coverage and reimbursement status is attained, less favorable coverage policies and reimbursement rates may be implemented in the future. Additionally, the regulations that govern regulatory approvals, pricing and reimbursement for new drugs and therapeutic biologics vary widely from country to country. Some countries require approval of the sale price of a drug or therapeutic biologic before it can be marketed. In many countries, the pricing review period begins after marketing approval is granted. In some foreign markets, prescription pharmaceutical pricing remains subject to continuing governmental control even after initial approval is granted. As a result, we might obtain regulatory approval for a product in a particular country, but then be subject to price regulations that delay our commercial launch of the product, possibly for lengthy time periods, and negatively impact the revenues we are able to generate from the sale of the product in that country. Adverse pricing limitations may hinder our ability to recoup our investment in one or more product candidates, even if our product candidates obtain regulatory approval. We are subject to U. S. and foreign anti- corruption and anti- money laundering laws with respect to our operations and non- compliance with such laws can subject us to criminal or civil liability and harm our business. We are subject to the U. S. Foreign Corrupt Practices Act of 1977, as amended, or the FCPA, the U. S. domestic bribery statute contained in 18 U. S. C. § 201, the U. S. Travel Act, the USA PATRIOT Act, and possibly other state and national anti- bribery and anti- money laundering laws in countries in which we conduct activities. Anti- corruption laws are interpreted broadly and prohibit companies and their employees, agents, third- party intermediaries,

joint venture partners and collaborators from authorizing, promising, offering or providing, directly or indirectly, improper payments or benefits to recipients in the public or private sector. We interact with officials and employees of government agencies and government- affiliated hospitals, universities and other organizations. In addition, we may engage third- party intermediaries to promote our clinical research activities abroad or to obtain necessary permits, licenses and other regulatory approvals. We can be held liable for the corrupt or other illegal activities of these third party intermediaries, **- 62-** our employees, representatives, contractors, partners and agents, even if we do not explicitly authorize or have actual knowledge of such activities. Our Code of Business Conduct and Ethics mandates compliance with the FCPA and other anti- corruption laws applicable to our business throughout the world. However, we cannot assure you that our employees and third- party intermediaries will comply with this code or such anti- corruption laws. Noncompliance with anti- corruption and anti ~~- 60 -~~ money laundering laws could subject us to whistleblower complaints, investigations, sanctions, settlements, prosecution, other enforcement actions, disgorgement of profits, significant fines, damages, other civil and criminal penalties or injunctions, suspension or debarment from contracting with certain persons, the loss of export privileges, reputational harm, adverse media coverage and other collateral consequences. If any subpoenas, investigations or other enforcement actions are launched, or governmental or other sanctions are imposed, or if we do not prevail in any possible civil or criminal litigation, our business, results of operations and financial condition could be materially harmed. In addition, responding to any action will likely result in a materially significant diversion of management' s attention and resources and significant defense and compliance costs and other professional fees. In certain cases, enforcement authorities may even cause us to appoint an independent compliance monitor which can result in added costs and administrative burdens. Comprehensive tax reform bills could adversely affect our business and financial condition. On December 20, 2017, the U. S. Congress passed the Tax Act, enacting comprehensive tax legislation that includes significant changes to the taxation of business entities. These changes include, among others: a permanent reduction to the corporate income tax rate; a partial limitation on the deductibility of business interest expense; a shift of the U. S. taxation of multinational corporations from a tax on worldwide income to a territorial system (along with certain rules designed to prevent erosion of the U. S. income tax base); and a one- time tax on accumulated offshore earnings held in cash and illiquid assets, with the latter taxed at a lower rate. **In addition, the IRA, among other things, imposes a minimum tax on the book income of certain large corporations and an excise tax on certain corporate stock repurchases.** Notwithstanding the reduction in the corporate income tax rate, the overall impact of this tax reform remains uncertain, and our business and financial condition could be adversely affected ~~. This Form 10- K does not provide an in- depth discussion of any such tax legislation or the manner in which it might affect purchasers of our Class A common stock. We urge our stockholders to consult with their legal and tax advisors with respect to any such legislation and the potential tax consequences of investing in our Class A common stock~~ . Risks Related to Our Class A Common Stock Our quarterly operating results may fluctuate significantly or may fall below the expectations of investors or securities analysts, each of which may cause our stock price to fluctuate or decline. We expect our operating results to be subject to quarterly fluctuations. Our net loss and other operating results will be affected by numerous factors, including: variations in the level of expense related to the ongoing development of our product candidates or future development programs; results of clinical trials, or the addition or termination of clinical trials or funding support by us or potential future partners; our execution of any collaboration, licensing or similar arrangements, and the timing of payments we may make or receive under potential future arrangements or the termination or modification of any such potential future arrangements; any intellectual property infringement, misappropriation or violation lawsuit or opposition, interference or cancellation proceeding in which we may become involved; additions and departures of key personnel; strategic decisions by us or our competitors, such as acquisitions, divestitures, spin- offs, joint ventures, strategic investments or changes in business strategy; if any of our product candidates receives regulatory approval, the terms of such approval and market acceptance and demand for such product candidates; regulatory developments affecting our product candidates or those of our competitors; and changes in general market and economic conditions. **- 63-** If our quarterly operating results fall below the expectations of investors or securities analysts, the price of our Class A common stock could decline substantially. Furthermore, any quarterly fluctuations in our operating results may, in turn, cause the price of our **Class A common** stock to fluctuate substantially. We believe that quarterly comparisons of our financial results are not necessarily meaningful and should not be relied upon as an indication of our future performance. ~~- 61 -~~ Our stock price may be volatile and purchasers of our Class A common stock could incur substantial losses. **The** ~~Our stock~~ price ~~is likely to be volatile. As a result~~ of **our** ~~this volatility, investors may not be able to sell their~~ Class A common stock **is likely to be volatile** ~~at or above the initial public offering price~~ . The market price for our Class A common stock has been, and may continue to be, impacted by many factors, including the other risks described in ~~this section~~ **" Risk Factors " under Part I, Item 1A** of this Form 10- K **, including** ~~titled ' ' Risk Factors'' and~~ the following: our ability to advance ATRC- 101 or potential future product candidates through preclinical studies and clinical trials; results of preclinical studies and clinical trials of ATRC- 101 or potential future product candidates, or those of our competitors or potential future partners; regulatory or legal developments in the United States and other countries, especially changes in laws or regulations applicable to our products; the success of competitive products or technologies; introductions and announcements of new products by us, our future commercialization partners, or our competitors, and the timing of these introductions or announcements; actions taken by regulatory agencies with respect to our products, clinical trials, manufacturing process or sales and marketing terms; actual or anticipated variations in our financial results or those of companies that are perceived to be similar to us; the success of our efforts to acquire or in- license additional technologies, products or product candidates; developments concerning any future collaborations, including, but not limited to, those with our sources of manufacturing supply and our commercialization partners; market conditions in the pharmaceutical and biotechnology sectors; announcements by us or our competitors of significant acquisitions, strategic partnerships, joint ventures or capital commitments; developments or disputes concerning patents or other proprietary rights, including patents, litigation matters and our ability to obtain patent protection for our

products; our ability or inability to raise additional capital and the terms on which we raise it; the recruitment or departure of key personnel; changes in the structure of healthcare payment systems; actual or anticipated changes in earnings estimates or changes in stock market analyst recommendations regarding our Class A common stock, other comparable companies or our industry generally; our failure or the failure of our competitors to meet analysts' projections or guidance that we or our competitors may give to the market; fluctuations in the valuation of companies perceived by investors to be comparable to us; announcement and expectation of additional financing efforts; speculation in the press or investment community; trading volume of our Class A common stock; sales of our Class A common stock by us or our stockholders; the concentrated ownership of our Class A common stock; changes in accounting principles; political, social, and economic instability abroad, including as a result of armed conflict, war or the threat of war, in particular, the current conflict in Ukraine, terrorist activity and other security concerns in general; natural disasters and other calamities, including global health epidemics or other contagious diseases; and general economic, industry and market conditions **, including changes in interest rates and inflation** . **- 64-** In addition, the stock markets in general, and the markets for pharmaceutical, biopharmaceutical and biotechnology stocks in particular, have recently experienced, and may continue to experience, extreme volatility as a result of, among other reasons, the ~~ongoing~~ COVID- 19 pandemic, related government and economic reactions, and other clinical and regulatory factors. Further, a significant downturn in the economy in general, or the markets for pharmaceutical, biopharmaceutical and biotechnology in particular, could negatively impact our strategic plans for our business, technologies, current or potential future product candidates, and our growth prospects. Such volatility has often ~~- 62-~~ been, and may in the future be, unrelated to our operating performance. These broad market and industry factors have adversely impacted, and may continue to adversely impact, the market price of our Class A common stock, regardless of our operating performance. The dual class structure of our common stock and the option of the holder of shares of our Class B common stock to convert into shares of our Class A common stock may limit stockholders' ability to influence corporate matters. Our Class A common stock has one vote per share, while our Class B common stock is non- voting. Nonetheless, each share of our Class B common stock may be converted at any time into one share of Class A common stock at the option of its holder, subject to the limitations provided for in our amended and restated certificate of incorporation. Consequently, if holders of Class B common stock exercise their option to make this conversion, this will have the effect of increasing the relative voting power of those prior holders of our Class B common stock, and correspondingly decrease the voting power of the current holders of our Class A common stock, which may limit stockholders' ability to influence corporate matters. Because our Class B common stock is generally non- voting, stockholders who own more than 10 % of our common stock overall but 10 % or less of our Class A common stock will not be required to report changes in their ownership from transactions in our Class B common stock pursuant to Section 16 (a) of the ~~Securities Exchange Act of 1934, as amended, or the~~ Exchange Act, and would not be subject to the short- swing profit provisions of Section 16 (b) of the Exchange Act. In addition, acquisitions of Class B common stock would not be subject to notification pursuant to the Hart- Scott- Rodino Antitrust Improvements Act of 1976, as amended. If securities or industry analysts do not publish research or reports about **us** ~~our company~~ , or if they issue an adverse or misleading opinion regarding our stock, our stock price and trading volume could decline. The trading market for our Class A common stock will be influenced by the research and reports that industry or securities analysts publish about us or our business. If any of the analysts who cover us, or who commence covering us in the future, issue an adverse or misleading opinion regarding us, our business model, our intellectual property rights or our Class A common stock performance, or if our target studies and operating results fail to meet the expectations of the analysts, our stock price would likely decline. If one or more of these analysts cease coverage of our company or fail to publish reports on us regularly, we could lose visibility in the financial markets, which in turn could cause our stock price or trading volume to decline. Our principal stockholders and management own a significant percentage of our stock and will be able to exert significant control over matters subject to stockholder approval. Based on the beneficial ownership of our capital stock as of December 31, ~~2021~~ **2022** , our executive officers and directors, together with holders of 5 % or more of our capital stock and their respective affiliates, beneficially owned a significant percentage of our Class A common stock and Class B common stock. As a result, these stockholders, if acting together, will continue to have significant influence over the outcome of corporate actions requiring stockholder approval, including the election of directors, any merger, consolidation or sale of all or substantially all of our assets and any other significant corporate transaction. In addition, pursuant to a nominating agreement between us and Baker Brothers Life Sciences L. P. and 667, L. P., or together, Baker Brothers, following the closing of our initial public offering and so long as Baker Brothers together with its affiliates beneficially owns at least 3, 333, 333 shares of our common stock, we will have the obligation to support the nomination of, and to cause our board of directors to include in the slate of nominees recommended to our stockholders for election, two individuals designated by Baker Brothers, each a Baker Designee, subject to customary conditions and exceptions, as well as the obligation to invite two board of directors observer designees of Baker Brothers to attend all meetings of our board of directors and all meetings of the committees of our board of directors as a nonvoting observer, if there is no Baker Designee on our board of directors, subject to customary conditions and exceptions. Baker Brothers and its affiliates may therefore have influence over **- 65-** management and control over matters requiring stockholder approval, including the annual election of directors and significant corporate transactions, such as a merger or other sale of our company or its assets, following the closing of our initial public offering and for the foreseeable future. The interests of these stockholders may not be the same as, and may even conflict with, your interests. For example, these stockholders could delay or prevent a change of control of our company, even if such a change of control ~~- 63-~~ would benefit our other stockholders, which could deprive our stockholders of an opportunity to receive a premium for their Class A common stock as part of a sale of our company or our assets and might affect the prevailing market price of our Class A common stock. The significant concentration of stock ownership may adversely affect the trading price of our Class A common stock due to investors' perception that conflicts of interest may exist or arise. Future sales and issuances of our Class A common stock or Class B common stock or rights to purchase Class A common stock or Class B common stock,

including pursuant to our 2019 Equity Incentive Plan, could result in additional dilution of the percentage ownership of our stockholders and could cause our stock price to fall. We expect that significant additional capital may be needed in the future to continue our planned operations, including further development of our discovery platform, preparing IND filings, conducting clinical trials, commercialization efforts, **and** expanded research and development activities and costs ~~associated with operating a public company~~ . To raise capital, we may sell Class A common stock or Class B common stock, convertible securities or other equity securities in one or more transactions at prices and in a manner we determine from time to time. If we sell Class A common stock or Class B common stock, convertible securities or other equity securities, investors may be materially diluted by subsequent sales. Such sales may also result in material dilution to our existing stockholders, and new investors could gain rights, preferences and privileges senior to the holders of our Class A common stock. Pursuant to our 2019 Equity Incentive Plan, or the 2019 Plan, our management is authorized to grant stock options and other stock- based awards, including RSUs, to our employees, directors and consultants ~~. Initially, the aggregate number of shares of our Class A common stock that may be issued pursuant to stock awards under our 2019 Plan is 6, 141, 842 shares~~ . Additionally, the number of shares of our Class A common stock reserved for issuance under ~~our~~ **the** 2019 Plan will automatically increase on January 1 of each year, beginning on January 1, 2020 and continuing through and including January 1, 2029, by 4 % of the total number of shares of our capital stock outstanding on December 31 of the preceding calendar year, or a lesser number of shares determined by our board of directors. Unless our board of directors elects not to increase the number of shares available for future grant each year, our stockholders may experience additional dilution, which could cause our stock price to fall. We are an ‘ ‘ emerging growth company’’ and our election of reduced reporting requirements applicable to emerging growth companies may make our Class A common stock less attractive to investors. We are an ‘ ‘ emerging growth company’’ as defined in the Jumpstart Our Business Startups Act, or JOBS Act. For as long as we continue to be an emerging growth company, we may take advantage of exemptions from various reporting requirements that are applicable to other public companies that are not emerging growth companies, including not being required to comply with the auditor attestation requirements of Section 404 of the Sarbanes- Oxley Act, or Section 404, reduced disclosure obligations regarding executive compensation in our periodic reports and proxy statements and exemptions from the requirements of holding a nonbinding advisory vote on executive compensation and stockholder approval of any golden parachute payments not previously approved. We could be an emerging growth company for up to five years following the completion of our initial public offering, although circumstances could cause us to lose that status earlier, including if we are deemed to be a ‘ ‘ large accelerated filer,’’ which occurs when the market value of our Class A common stock that is held by non- affiliates exceeds $ 700 million as of the prior June 30, or if we have total annual gross revenue of $ 1. ~~07~~ **235** billion or more during any fiscal year before that time, in which cases we would no longer be an emerging growth company as of the following December 31, or if we issue more than $ 1. 0 billion in non- convertible debt during any three- year period before that time, in which case we would no longer be an emerging growth company immediately. Even after we no longer qualify as an emerging growth company, we could still qualify as a ‘ ‘ smaller reporting company,’’ which would allow us to take advantage of many of the same exemptions from disclosure requirements including not being required to comply with the auditor attestation requirements of Section 404 and reduced disclosure obligations regarding executive compensation in our periodic reports and proxy statements. We cannot predict if investors will find our Class A common stock less attractive because we may rely on these exemptions. **- 66-** If some investors find our Class A common stock less attractive as a result, there may be a less active trading market for our Class A common stock and our share price may be more volatile. Under the JOBS Act, emerging growth companies can also delay adopting new or revised accounting standards until such time as those standards apply to private companies. We have elected to avail ourselves of an exemption that ~~- 64-~~ allows us to delay adopting new or revised accounting standards until such time as those standards apply to private companies. As a result, we will not be subject to the same new or revised accounting standards as other public companies that comply with the public company effective dates, including but not limited to the new lease accounting standard. We may also elect to take advantage of other reduced reporting requirements in future filings. As a result of these elections, the information that we provide to our stockholders may be different than you might receive from other public reporting companies. However, if we later decide to opt out of the extended period for adopting new accounting standards, we would need to disclose such decision and it would be irrevocable. We will incur increased costs as a result of operating as a public company, and our management will be required to devote substantial time to new compliance initiatives and corporate governance practices. As a public company, and particularly after we are no longer an emerging growth company, we will incur significant legal, accounting and other expenses that we did not incur as a private company. The Sarbanes- Oxley Act, the Dodd- Frank Wall Street Reform and Consumer Protection Act, the listing requirements of the Nasdaq ~~Stock~~ **Select Global** Market **, or Nasdaq,** and other applicable securities rules and regulations impose various requirements on public companies, including establishment and maintenance of effective disclosure and financial controls and corporate governance practices. Our management and other personnel will need to devote a substantial amount of time to these compliance initiatives. Moreover, these rules and regulations will increase our legal and financial compliance costs and will make some activities more time- consuming and costly. For example, we expect that these rules and regulations may make it more difficult and more expensive for us to obtain director and officer liability insurance, which in turn could make it more difficult for us to attract and retain qualified members of our board of directors. However, these rules and regulations are often subject to varying interpretations, in many cases due to their lack of specificity, and, as a result, their application in practice may evolve over time as new guidance is provided by regulatory and governing bodies. This could result in continuing uncertainty regarding compliance matters and higher costs necessitated by ongoing revisions to disclosure and governance practices. Our ability to use net operating losses ~~, or NOLs,~~ to offset future taxable income may be subject to certain limitations. In general, under Section 382 of the Internal Revenue Code of 1986, as amended, or the Code, a corporation that undergoes an ‘ ‘ ownership change’’ is subject to limitations on its ability to utilize its pre-change ~~NOL~~ **net operating loss** or tax credits to offset future taxable income. Our existing **net operating losses, or** NOLs **,** or

credits may be subject to substantial limitations arising from previous ownership changes, and if we undergo an ownership change our ability to utilize NOLs or credits could be further limited by Section 382 of the Code. In addition, future changes in our stock ownership, many of which are outside of our control, could result in an ownership change under Section 382 of the Code. Our NOLs or credits may also be impaired under state law. Accordingly, we may not be able to utilize a material portion of our NOLs or credits. Furthermore, our ability to utilize our NOLs or credits is conditioned upon our attaining profitability and generating U. S. federal and state taxable income. As described above under ' ' — Risks Related to Business,'' we have incurred significant net losses since our inception and anticipate that we will continue to incur significant losses for the foreseeable future; thus, we do not know whether or when we will generate the U. S. federal or state taxable income necessary to utilize our NOLs or credits. We may incur significant costs from class action litigation due to ~~our~~ expected **volatility of the price of our Class A common** stock ~~volatility~~. ~~Our~~ **The price of our Class A common** stock ~~price~~ may fluctuate for many reasons, including as a result of public announcements regarding the progress of our development efforts for our discovery platform and our product candidates, the development efforts of future partners or competitors, the addition or departure of our key personnel, variations in our quarterly operating results and changes in market valuations of biopharmaceutical and biotechnology companies. This risk is especially relevant to us because biopharmaceutical and biotechnology companies have experienced **- 67-** significant stock price volatility in recent years. When the market price of a stock has been volatile as our stock price may be, holders of that stock have occasionally brought securities class action litigation against the company that issued the stock. If any of our stockholders were to bring a lawsuit of this type against us, even if the lawsuit is without merit, we could incur substantial costs defending the lawsuit. The lawsuit could also divert the time and attention of our management. ~~- 65-~~ Anti-takeover provisions in our charter documents and under Delaware law could make an acquisition of our company, which may be beneficial to our stockholders, more difficult and may prevent attempts by our stockholders to replace or remove our current management. Provisions in our amended and restated certificate of incorporation and our amended and restated bylaws may delay or prevent an acquisition of our company or a change in our management. In addition, these provisions may frustrate or prevent any attempts by our stockholders to replace or remove our current management by making it more difficult for stockholders to replace members of our board of directors. Because our board of directors is responsible for appointing the members of our management team, these provisions could in turn affect any attempt by our stockholders to replace current members of our management team. These provisions include: a prohibition on actions by our stockholders by written consent; a requirement that special meetings of stockholders, which our company is not obligated to call more than once per calendar year, be called only by the chairman of our board of directors, our chief executive officer, or our board of directors pursuant to a resolution adopted by a majority of the total number of authorized directors; advance notice requirements for election to our board of directors and for proposing matters that can be acted upon at stockholder meetings; division of our board of directors into three classes, serving staggered terms of three years each; and the authority of the board of directors to issue preferred stock with such terms as the board of directors may determine. Moreover, because we are incorporated in Delaware, we are governed by the provisions of Section 203 of the Delaware General Corporation Law, as amended, which prohibits a person who owns in excess of 15 % of our outstanding voting stock from merging or combining with us for a period of three years after the date of the transaction in which the person acquired in excess of 15 % of our outstanding voting stock, unless the merger or combination is approved in a prescribed manner. These provisions would apply even if the proposed merger or acquisition could be considered beneficial by some stockholders. Our amended and restated certificate of incorporation provides that the Court of Chancery of the State of Delaware and, to the extent enforceable, 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 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: any derivative action or proceeding brought on our behalf; any action asserting a breach of fiduciary duty; any action asserting a claim against us or our directors, officers, or employees arising under the Delaware General Corporation Law, our amended and restated certificate of incorporation, or our amended and restated bylaws; and any action asserting a claim against us that is governed by the internal- affairs doctrine. This provision would not apply to suits brought to enforce a duty or liability created by the Exchange Act or any other claim for which the U. S. federal courts have exclusive jurisdiction. 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 further provides that the federal district courts of the United States of America will be the exclusive forum for resolving 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~~ ~~66~~ **68** -