DESTINATION STARTUP

Cetya Therapeutics

One-Sentence Summary of What You Do: Cetya is developing HDAC inhibitors which are analogs of largazole, a natural product Class I-restricted HDAC inhibitor. Cetya is focused in two key areas: (i) solid tumor indications in oncology and (ii) hemoglobinopathies such as sickle cell disease. We have drugs with excellent selectivity with early evidence of improved safety.

Affiliated Institution: Colorado State University

Have you formed a company yet? Yes

Funding/Financing: Grant Funding, Direct/Indirect University Support, Angel Funding (including Self or Friends/Family)

Please describe your company and the problem you are trying to solve: Treatment of sickle cell disease (SCD)i s our most advanced program. SCD is a genetic disorder in the adult form of hemoglobin, reducing oxygen binding, causing hemoglobin to polymerize leading to the “sickling” deformity in the shape of the red cells which have increased friction with the vasculature leading to reduced half-life for those red cells (18 days vs. 120 days for normal red cells, increased clotting episodes and eventual multiple organ failure and early death. The average lifespan in the US of SCD patients is 45 years. Seven percent of the world’s population carries an abnormal hemoglobin gene and annually 400,000 newborns are afflicted with a severe hemoglobinopathy. Sickle cell disease affects 100,000 individuals in the US. Fetal hemoglobin is down-regulated shortly after birth, but if present could compensate for deficient or defective adult hemoglobin. It is thus a natural remedy – but requires activation. HDACs are a family of epigenetic enzymes that are important in regulating the expression of many genes, and our data suggests that the fetal hemoglobin gene can be activated by Cetya’s HDAC inhibitor, CT-101 without significant toxicity.

Cetya is a startup company based in Fort Collins. Cetya has an exclusive worldwide license to the largazole analog patent estate invented by Dr. Robert M. Williams of CSU which includes three issued US patents and two pending applications which were filed in US and internationally. CT-101 is one of our licensed analogs and is our lead candidate molecule for hemoglobin disorders such as SCD.

What is/was your go-to-market strategy? The 100,000 US patients with SCD require $3B in medical care annually. This consists of hospital stays during SCD “crises” (episodes of clotting with intense pain), transfusions, both in- and out-patient, and drug therapy to ameliorate the side effects. There are two approved drugs for treating SCD, hydroxyurea (HU), approved a decade ago, and L-glutamine, approved in 2018. Hydroxyurea increases the level of fetal hemoglobin, and thus mitigates the severity of the side effects of SCD. Any increase in fetal hemoglobin levels has been

shown to provide clinical benefit to SCD patients.

SCD is typically diagnosed in the first year of life. Therefore, any drug contemplated for treatment of SCD must have a good safety profile. In particular, the drug must be non-mutagenic. CT-101 has been screened in the Ames mutagenicity test and been shown to be negative. In a pre- clinical transgenic mouse model of SCD, CT-101 out-performed HU in elevating fetal hemoglobin to higher levels, and was shown to synergize with HU to elevate fetal hemoglobin levels higher than either drug alone.

Cetya intends to out-license the use of CT-101 for treatment of SCD following successful completion of a Phase I study demonstrating clinical benefit with a good safety package to a pharma partner with considerably greater resources and expertise at conducting late stage clinical trials and gaining FDA marketing authorization to commercialize the drug.

How will/do you generate revenue? Cetya is an early stage company. It plans to develop its drug candidates through Phase I clinical trials, where safety is established and preliminary proof of efficacy can be demonstrated. Cetya plans to out-license its candidates as Phase II-ready assets at that time, with the potential for a trade sale of the company or an IPO based on the strength of the Phase I data.

Cetya is open to licensing its drug candidates earlier in the development process if desired. The value of the drug candidates, and thus Cetya itself, increases as each milestone in the development path is achieved. Upfront fees associated with successful licensing of early candidates will allow Cetya to advance additional candidates into clinical development. Longer-term, revenue will come from milestone achievements as CT-101 advances through the clinic and, once on the market, royalties on product sales.

Cetya also continues to apply for grants at the State and Federal level. We have a pending $1,000,000 Phase II STTR grant to study our lead compound CT-101 in sickle cell disease for which we expect to receive the Notice of Award by the end of September. This follows our successful Phase I STTR grant of $240,000 in which we achieved proof of concept in vitro and in vivo of fetal hemoglobin up-regulation.

How will this showcase benefit your company or technology? Cetya will require $5-7M to complete the IND-enabling studies, file the IND and perform its Phase I clinical study to demonstrate safety and gain early evidence of efficacy for CT-101 in sickle cell disease. Ideally, this would come from a corporate partner who could add resources and expertise to conduct that study in a cost and time-efficient manner. Realistically, however, pharma wants to see the product candidate de-risked prior to making such an investment, and the most likely scenario is obtaining such investment in a series of tranches starting with a small raise ($0.5-1M), a larger raise ($1.5-2M) followed by the main capital investment of $3-4M.

At present, we are not seeking to add further senior resources. Regulatory is one area where assistance will be needed, but such expertise is available from our strategic investor, InSymbiosis through its parent company Camargo.

This showcase will allow us to present our latest data on CT-101 in sickle cell disease, highlight the breadth and depth of experience in our management team and Board, and gain further visibility in the local investment community.

Who are the members of your team and why is this the right team to get the job done?

Management Team

- Clifford Hendrick — CEO. Mr. Hendrick spent over 25 years working for Genzyme Corporation, most recently as the Vice President and General Manager of Early Development for the Oncology business. He has taken both small molecule and biologics through late preclinical development and into early stage clinical trials.
- Louis Junker — VP, Development and Operations. Dr. Junker has worked over 25 years developing and commercializing therapeutic products for biotechnology and drug companies.
- John Adair — CFO. Mr. Adair has over twenty five years pharmaceutical and medical device finance and operations experience including senior roles at Amgen, Thermo Fisher Scientific and Akzo Nobel NV.

Board of Directors

- Ronald Martell — Chairman, Board of Directors. Ron is well- known in the venture capital community, former CEO of Poniard Pharmaceuticals, and provides Cetya with strategic guidance.
- Dean Wenham — Dr. Wenham is a pharmacologist, entrepreneur and founder and CEO of InSymbiosis and InSynchrony Ventures.
- Clifford Hendrick — CEO
- Robert Williams — Founder and Member, Board of Directors. Bob is the inventor of the IP Cetya licensed from CSU, and continues to support Cetya through research in his laboratory.
- Terry Opgenorth — Board Observer. Terry is the CSU Ventures representative with the Board of Directors, although non-voting. Terry is a former SVP as Abbott Labs, now AbbVie, and advises on research strategy and science.
- Industry stalwarts Novartis and Eli Lilly are potential licensing partners and CROs such as Catalent and CSSi Life