Bioma Therapeutics Inc.
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Industry:
Biotech company

Management:
Rafael Gras, Ph.D., Founder, CEO
Seeking for CTO, COO, CFO

Board: seeking members

Scientific Advisory Board:
seeking members

Number of Employees: 1

Finance:
Accounting/Tax: seeking an accountant

Funding to Date: Founder: $2500

Financing Sought: $750,000

For:
Prototype co-development.
Hardware development
POC validation
R&D
A.I algorithms development

IP: Ohlandt, Greeley, Ruggiero & Perle, LLP

Legal: seeking representation

Business Description / Company Background:
Induced pluripotent stem cells (iPSC) must be differentiated to functional mature cells to exploit the full potential of their regenerative and drug discovery applications. However, developing a reliable in vitro differentiation protocol is extremely expensive and time consuming. Bioma Therapeutics' proprietary technology aims to reduce the experimental cost and time of developing standardized and replicable differentiation protocols for our customers, shortening the path to medical discoveries.

Market Opportunity / Unmet Need:
The biomedical potential of induced PSC (iPSC) is enormous, but it could be summarized into 3 broad fields: (1) Regenerative medicine: There are more than 660 entities in US, including universities, medical centers, foundations and cell therapy companies, carrying out stem cell research. Global regenerative medicine market was valued at $30.6B in 2021, with a CAGR of 11% from 2021- 27 (*Grand View Research, Inc*); (2) Disease modeling: iPSC-derived mature patient-specific cells can be used to generate models to study the molecular pathogenesis. One of the most frequently used tools for disease modeling, humanized mouse models, has a market size expected to reach $239M by 2028, at a CAGR of 10.2% (*Reports and Data*); and (3) Drug discovery: current toxicology studies are limited in projecting clinical safety, with 30% of the drugs failing to make market entry due to poor tolerability. iPSC-based customized models can assess drug-induced toxicity at the population level. The global in-vitro toxicology testing market size was estimated at $23B in 2020 and is expected to expand at a CAGR of 10.7% from 2021 to 2028 (*Grand View Research, Inc)*.

Products / Services – Launched & Pipeline:
We compile, analyze, and generate data on embryo developmental pathways that customers can use to accelerate their regenerative therapy or drug discovery process. We find correlations and transform these data into actionable insights, in form of key protocol modifications, that can be plugged into existing differentiation protocols or help build one *de novo*. Business model involves two strategies: (1) seeking funding from non-profit foundations to produce commercially available disease and toxicology models for diverse therapeutic areas that would bring safer drugs to clinic, and (2) simultaneously working with industry and academic clients to deliver standardized protocols for differentiating iPSCs to any given cell type, following a data type-based pricing.

Commercial / Technical Milestones:
Achieved: Bioma Therapeutics was incorporated (2021); Provisional patient filed (2022). Pending: Filing of non-provisional patent, creation of A.I. algorithm I to predict successful differentiation protocols and API to test them in the automated cell culture hardware (2023); A.I. algorithms II & III for data collection and informatics tool I, a database that stores information collected from public sources to have it available for Algorithm I analysis (2024); A.I. algorithm IV and informatic tool II, which are connected to a deep learning algorithm as a complement or alternative to data from public sources (2025).

Competition / Competitive Advantage / Customer Benefits:
Mogrify is using big data analysis to study stem cell epigenetic landscape and develop standardized protocols to transform one adult cell type into another adult cell (transdifferentiation). Although this might be a tempting approach, research shows that such short-cut to cellular programming comes at a cost of functionality. At Bioma Therapeutics, we plan to differentiate iPSCs to target cell types by faithfully recapitulating embryonic developmental cues, which will not only allow for a marker-based cellular phenotyping, but also ensure nuanced functionality.

Financial Forecast (Unaudited):
The cost for achieving the technical milestones for the first 2 years will be covered by funding received from partnerships with non-profit foundations and industry. These collaborations would be incentivized by future rights on the developed technology. Then we will seek funds from investors to develop our own independent hardware. We expect to break even by year 5.

(in '000s)	Year 1	Year 2	Year 3	Year 4	Year 5
Revenue (sales + collaborations)	0	310	525	400	900
Gross Profit	0	0	30	65	400
Gross Margin	0%	0%	60%	65%	80%
Expenses	206	295	814	788	898
Net Income	(206)	15	(289)	(388)	2