Vyant Bio, Inc
www.vyantbio.com

Transforming drug discovery to get more breakthrough medicines to patients

With its multi-functional drug discovery engine that combines digital and human-based platforms, such as AnalytiX and microOrgan, Vyant Bio is accelerating the drug discovery process from ID to IND.

After decades of accepting the status quo of mostly failed therapeutic candidates and enormous costs for bringing drugs through the discovery and development process, the pharmaceutical industry is embracing a significant technological paradigm shift. To get more life-changing medicines to patients, biopharma must adopt a new way to accelerate timelines, reduce costs, and slash the attrition rate that causes so much wasted time, money, and effort. The building blocks needed for this new, better approach to drug discovery are now available. Vyant Bio has cemented the blocks together to create a human-powered drug discovery engine—and is now advancing candidates that showcase its power and potential.

Vyant Bio's drug discovery engine brings the most promising and innovative technology together with the gold standard for safety and efficacy assessment to collectively power the process from concept through to investigational new drug (IND) authorization-enabling development and increase the chances of success in the clinic.

The digital platform, AnalytiX, sits at the intersection of human biology and machine learning, empowering Vyant Bio to quickly and comprehensively evaluate human-relevant data to identify the impact of drug candidates, targets, and biomarkers. AnalytiX is complemented by Vyant Bio's proprietary microOrgan technology. Using complex microtissues engineered from patient-derived stem cells, Vyant Bio runs high-throughput, human-based drug discovery, generating insights into how drug molecules will behave in patients well before incurring the time and expense of clinical trials. Generating those insights in the lab, rather than the clinic, positions Vyant Bio to de-risk decision making and increase the chances of success once candidates advance into human testing.

Together, AnalytiX and microOrgans equip Vyant Bio to quickly identify drug candidates and predict how they will perform in humans. Vyant Bio rounds out its drug discovery engine with traditional animal efficacy and safety testing, and regulatory rigor, giving it the full set of requirements needed to take molecules through IND-enabling studies (Fig. 1).

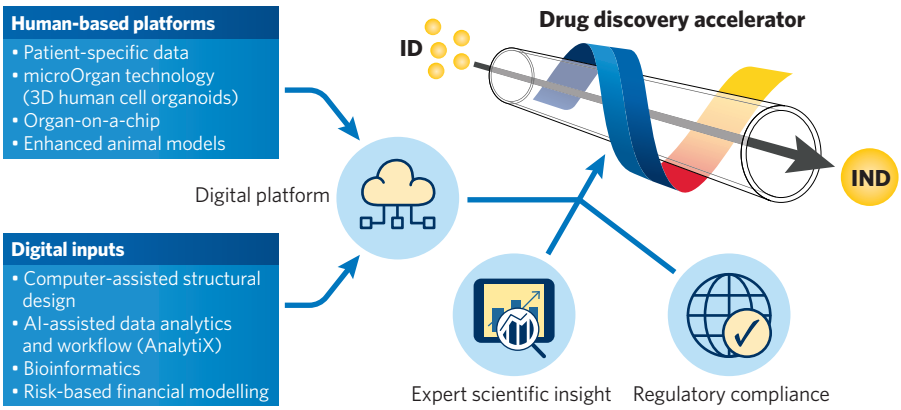

Fig. 1 | Vyant Bio's drug discovery accelerator. A number of factors contribute to and power the drug discovery process, allowing ID to IND of potential drug candidates.

Validating the drug discovery engine

The power of Vyant Bio's engine is illustrated by its work on Rett syndrome, a rare neurodevelopmental disorder. To discover Rett therapies, Vyant Bio created a patient-derived stem-cell model that provided a representative disease model to support high-throughput phenotypic screening. While traditional research and development (R&D) programs introduce patient biology late in the process, which can lead to expensive failures in the clinic, Vyant Bio's work on Rett brought patient biology to the bench, benefitting from patient insights from the start.

Vyant Bio paired the three-dimensional (3D) microBrain Rett-disease model with its AnalytiX data platform, enabling rapid quantification of the impact of candidate compounds on multiple measures of human biology and allowing for early rankings of potential therapeutics based on their predicted safety and efficacy. Ultimately, Vyant Bio identified a wholly-owned candidate compound, VYNT-0126, which is now in lead optimization, and a partnered asset that is following close behind. These candidates could make a major difference in the lives of children diagnosed with Rett as well as to their families.

Vyant Bio is striving to broaden the output of its discovery engine to help more patients. The Rett program serves as a blueprint for how Vyant Bio is tackling other neurodevelopmental and neurological disorders. In addition to its work on a treatment for a second rare neurodevelopmental disease, CDKL5-deficiency disorder (CDD), Vyant Bio is developing Parkinson's disease and Alzheimer's disease models.

Partnering to get drugs to patients

Vyant Bio is cultivating both early- and late-stage partnerships to help drive discovery. Partnering with companies that can augment its artificial intelligence (AI) modelling is helping to identify the most promising candidate compounds in silico, further reducing study times and costs. Vyant Bio has also moved into cancer R&D, using rich genetic data, AI-assisted protein-design models, and the cell-line assets and oncology expertise from a collaboration partner and its subsidiary *vivo*Pharm to advance models targeting human epidermal growth factor receptor 2 (HER2)-positive protein-expression research. As Vyant Bio takes neurological and cancer therapeutic candidates into early clinical development, it will seek partners for its programs, enabling it to stay focused on transforming drug discovery and provide leverage to enhance the strengths of biopharma companies' clinical development expertise.

After decades in which the late introduction of human biology into R&D programs drove up costs and attrition, Vyant Bio is pioneering a new drug discovery model empowered by patient and data insights. Biopharma companies can partner with Vyant Bio to benefit from its ground-breaking work, opening up opportunities to bring new medicines to patients faster and more efficiently than ever.

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