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Driving Up Drug Discovery

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As India takes baby steps in the field of drug discovery, it becomes crucial that the government steps up and provides requisite support to usher in a conducive environment for pharma companies to excel. Concrete measures are warranted to boost and promote drug discoveries by Indian players to add another dimension to the larger Aatmanirbhar Bharat mission. Let's explore further.



On July 5, Aurigene Discovery Technologies, a clinical stage biotech company committed to bringing novel therapeutics for the treatment of cancer and inflammation and a wholly owned subsidiary of Dr. Reddy's Laboratories has announced drug discovery, development and commercialisation partnership with EQRx, which operates as a biotechnology company in the US, focused on re-engineering the process from drug discovery to patient delivery with the goal of offering a market-based solution for the rising cost of medicines.

The partnership combines Aurigene's small molecule drug discovery platform and EQRx's pioneering business model to accelerate the development of drug candidates in the areas of oncology and immune-inflammatory diseases and improve global access to innovative medicines.

Based in Bengaluru and Kuala Lumpur, Aurigene has developed deep expertise in cancer and inflammatory disorders, and has continuously invested in its people resources and infrastructure over the years. In the two decades of working with pharma, biotech and academic partners, Aurigene has contributed to delivering 16 small molecule and peptide drug candidates, currently in clinical development. Aurigene has also out-licensed several first-in-class and best-in-class compounds to pharma and biotech companies for global clinical development, while undertaking clinical POC studies for a few programmes on its own.

Besides Aurigene, many other large and small companies have been spending on drug discovery and development research using the latest available Information Technology tools such as artificial intelligence (AI) and machine learning (ML).

In February this year Excelra, Hyderabad-based company specialises in Algorithms, Biomarker Discovery, Drug Discovery, Drug Repurposing, Immuno Oncology, Knowledgebase has entered into a collaboration with X-Chem, a leader in small molecule drug discovery services for pharmaceutical and biotech companies to accelerate preclinical drug discovery and aid scientists to find new drug candidates for currently hard-to-drug targets.

This synergistic new partnership between Excelra's GOSTAR and X-Chem's RosalindAI will enable unique and powerful tools to predict small molecules, chemical, biological, and physical properties, accelerating time and resource-intensive stages of drug discovery from hit identification to preclinical candidate selection.

Excelra noted that the GOSTAR's proprietary data set underwent rigorous analysis and large-scale machine learning model building to predict drug solubility in a recent joint study. X-Chem's RosalindAI delivered superior and actionable results than other similar analyses using well-known publicly available datasets. The results confirmed that RosalindAI's proprietary models are designed specifically to address challenges in chemical datasets, and when trained on the larger, more diverse GOSTAR data, yielded models twice as better than models trained on other datasets.

Adding to the list of collaboration between public and private firms in the drug discovery space is KnowDis and IIT Delhi as both have collaborated to accelerate drug discovery using AI. The collaboration aims to develop cutting-edge AI models that could discover potential antibodies essential for treating brain diseases.

KnowDis noted that the collaboration aims to develop an algorithm that will predict, with high-throughput, antibodies effective in treating neurodegenerative diseases such as Alzheimer's disease and Parkinson's. This will result in drugs becoming more affordable as it will lead to quicker development of effective therapies for dementia, and Alzheimer's disease, reducing the long wait for treatment. The process of designing and producing antibodies is time-consuming and expensive but an algorithm can add value to channelling laboratory work.

On the other hand DFE Pharma, a global leader in pharma- and nutraceutical excipient solutions, announced the launch of its new Center of Excellence "Closer to the Formulator" (C2F) in Hyderabad. The C2F center helps pharmaceutical companies to shorten the time from a concept to a finished commercial product through expertise in all phases of pharmaceutical development.

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