Decoding genes to find solutions for diseases

MedGenome offers research and diagnostics in complex gene-related maladies; needs to expand reach, writes **Shameen Alauddin**

Fascinated with the idea of the "source code of life", Sam Santhosh, founder of MedGenome, spent a little more than seven years in decoding the cause of genomic diseases and finding solutions for these. His research came after completion of the human genome project created waves in the health care and scientific world in 2003.

With advanced technologies like Next Generation Sequencing (NGS), Santhosh saw an opportunity to build a company focused on genomics. And, started SciGenom in 2010. Based out of Kochi, it catered for genomics services and offerings across humans, agriculture, microbials and animals. In 2011, MedGenome was incubated as a division of SciGenom, with a focus on offering genetic diagnostics for human samples. In 2013, MedGenome was spun off as an independent company.

The start-up recently bagged $40 million in Series-C funding, led by Sofina, Sequoia Capital and HDFC. This comes a little over seven months after it received $30 million from existing investors Sequoia Capital and Sofina SA.

MedGenome, founded by Sam Santosh, leverages health data for insights into complex diseases

Concept

Genomics is the study of genes and its functions that help identify their combined influence on growth and development of the organism. A genome is stored in long molecules of DNA called chromosomes. MedGenome is a genomics-based diagnostics and research company that aims to improve global health by decoding the genetic information in an individual's genome.

The company claims to be the first leading provider of end-to-end solutions for genomics research in India.

The founder says MedGenome pioneered liquid biopsy test OncoTrack in India for monitoring of cancer treatment, a non-invasive pre-natal screening test (NIPT) for screening of chromosomal abnormalities in a foetus, a carrier screening test for couples planning a baby and a whole exome sequencing test for identifying mutations in rare diseases.

The company leverages Indian health data to provide insights into complex diseases at a molecular and genetic level. Its research solutions apply cutting-edge genomics technologies, bioinformatics, computing and big data analytics to the genetically diverse and large South Asian population. It helps understand the genetic basis of cancer, metabolic disorders, eye disorders and other complex ailments. It also addresses research questions in hereditary diseases, cardio-vascular complications and neurological disorder.

FACT BOX

Inception: 2013

Area of business: Health care

Funding: $40 million Series C-funding by HDFC, Sofina, Sequoia Capital

User base: Pharma, hospitals, research and diagnostic centres

Team strength: 370

Opportunity

MedGenome's Certified Analytics Professional laboratory in Bengaluru is the largest NGS lab in Southeast Asia, claims the company.

OncoTrack is a blood test to monitor and assess the response to treatment for cancer. It facilitates early detection of emergent genetic alterations that could be associated with resistance to therapy during cancer progression.

The sector is at a nascent stage in India. Most gene samples have to be sent abroad. That not only means higher costs for patients but also a longer waiting period to get the results. Also, due to lack of baseline Indian genetic data, these reports are not necessarily accurate. MedGenome aims to create awareness of this industry and solve the inefficiencies.

Others in the field include Strand Life Sciences, Datar Genetics and Core Diagnostics. The company claims to be the biggest, working with over 500 hospitals. "We believe genomics will continue to change and define the future of diagnostics and medicine. MedGenome's world-class infrastructure and bioinformatics capabilities separate these from domestic competition, and their unique access to India-specific data makes them significant in the global context," says Abhay Pandey, managing director, Sequoia Capital India Advisors.

Revenue

Having two main sources of revenue, research and diagnostics, the start-up makes money by mostly getting contracts. It has a little over 85 business-to-business customers for its research services and 1,200 diagnostics customers in India, Singapore and the United States.

It pegs the Indian genetics diagnostics market at $40 million, with an expected annual growth rate of 15 per cent till 2020. Currently, it sees the NSG market at $6 million.

While the company did not disclose financial details, it says it earns an operating profit.

Ahead

MedGenome's long-term vision is to develop medicines precisely for diseases currently deemed difficult to cure. And, to expand to other South Asian countries. The next milestone would be to license its internet protocol-driven data to pharmaceutical companies and cross the $24-million mark for financial year 2017-2018.

EXPERT TAKE

Cost of tests is a major hurdle

KUMAR PRAKASH
Medical oncologist at Tata Memorial Hospital, Mumbai

Genomics is a very important development in health care. This is a huge unmet need in our country, considering the population number and also the aspirational population. This industry is challenging to succeed in. The business model for MedGenome includes the development of good quality and cost-effective genomics testing. This includes partnering with various stakeholders, including academic institutions. This helps them to develop tests in real and unmet need areas, in a cost-effective manner. They also cater to the need of patients abroad, helping ensure revenue flow. This can be scaled up with some work in India and abroad.

At present, quality and cost-effective tests are tough to develop. Cost has been the main reason which has led to under-use of these tests in the practice.

There are challenges in this field. Abroad, the challenges are of an already existing organisation which have a lead over MedGenome. This is tough to break into but everywhere in the world, cost has been a big issue in health care. If cost is maintained low in the development of tests, they will be able to break into many markets in the world.

It is also important that the US Food and Drug Administration (FDA) has started giving a label to these tests. It will be important that these tests may start applying for FDA labels, which could give a huge boost to their scalability. Currently, in India, they develop tests where a huge component has reagents that are imported. If these can be replaced by reagents developed in India, the cost-cutting could be huge. We have seen this in China.