BioSpectrum
the business of Bio & Health Sciences

“Microbiome companies in India are exploring health interventions that lack precision & accuracy”

07 July 2023 | Views

Having witnessed his father’s fight with colon cancer, mother’s journey of type 2 diabetes & practice of modern medicine to suppress his father’s tumour through harmful chemicals rather than identifying root cause & curing it, Sushant Kumar discovered that the current healthcare system focuses on symptom care, and it is not equipped to carve out disease modifying interventions. This led him to start his own venture Genefitletics in 2019, which is born out of Sushant’s obsession to solve the growing pandemic of chronic diseases. Through Genefitletics, Sushant has embarked on a mission to uncover the potential of microbes in order to eradicate the epidemic of chronic diseases & cancer.

The startup has recently announced the development Asia’s first & only precision formula engineered for an individual’s unique biology. BioSpectrum spoke to Sushant Kumar, Founder & Chief Executive Officer, Genefitletics, based out Kullu, to understand more about the concept of microbiome and its impact on chronic diseases treatment.

What are the key products developed by Genefitletics since inception? Please elaborate upon the technology behind developing these products?

The future of health & longevity is data driven precision. With this in mind, we have developed India’s first microbiome therapeutics as a service platform (MTAAS)- PROTEBA which is home to our unique gut & vaginal microbiome functional activity tests & analszes microbial functions at molecular level.

The platform builds & applies human biology models to measure biology + chemistry at a molecular level & then further apply mathematical models to determine molecular signatures predictive of chronic diseases & provide disease modifying

therapeutic interventions.

The platform has already mined 25 billion molecular data sets for 200 plus customers.

PROTEBA works on convergence of two different technologies & scientific advancements to give a digital footprint of human body.

First step- Next Generation sequencing technology is designed for scalable at-home collection of biological samples- stool, vaginal swab, saliva & human blood at ambient temperature. Full automated sequencing of biological samples ensures accurate readouts. The raw material so obtained are processed through a novel bioinformatics algorithm to produce quantitative microbial data representing an individual's microbial functions & taxonomy features.

Second Step- Machine Learning model consists of a functional pathway proprietary algorithm to analyze microbial data from the first step against in-house pathway database. Scoring pathway activities help to identify pre-symptomatic molecular signatures predictive of chronic diseases & determine level of sub-optimality of various biological functions at a molecular level.

Third Step- Machine Learning consists of a predictive nutrition proprietary algorithm to map the functional activity level from the second step with bioactive molecules & chemicals in food & supplements to suggest precise disease modifying therapeutics interventions.

What new products are in the pipeline and when do you plan to launch those?

We plan to launch two new tests- Oral microbiome & human cells tests.

ORAHYG, which we plan to launch in the third week of August 23, is Asia's first Oral microbiome test & will decode the biochemical reactions happening at the top of the digestive tube- the mouth. The molecular insights from this test would give an unprecedented view of dental, cardiovascular, autoimmune & brain health.

Human cells tests, which we plan to launch in Jan '24, would address other key areas of health such as cellular health, aging, mitochondria health & immunity. This test when coupled with gut & oral microbiome test will give a complete functional picture of human biology at molecular & cellular level

in Aug '23, we are also launching Asia's first & only precision formula engineered for an individual's unique biology based on molecular insights derived via PROTEBA. The precision supplements covering vitamins, herbs, enzymes, amino acids, food extracts, prebiotics & prebiotics in exact dosage will be made to order & over & above the nutrition interventions to fill in temporary nutrition gaps caused by systemic inflammation.

Over the next 5 years, Genefitletics plans to help at least 1 million people reclaim control of their health.

How much funding have you raised so far, and what are the future projections of your business growth?

Since inception, we have been bootstrapped & fully profitable. We have recently closed a pre-seed round of Rs 25 lakh at a pre money valuation of Rs 7.5 crore to upgrade our technology footprint & invest in branding initiatives.

In the seed round, around 12 months from now, we are looking to raise Rs 1 Crore to fund our growth & expansion & continue educating the masses about microbiome.

While the microbiome market is growing in India, what challenges do you see which might hinder its growth in the coming years? How is Genefitletics addressing those challenges?

Microbiome testing, as we call it today, is at a nascent stage. There are multitude of challenges which if not addressed properly, can impact growth of the microbiome market in India & hence human health.

Microbiome is still misunderstood & is considered harmful. A collaborative exponential knowledge dissemination is required to help healthcare stakeholders build microbial science into their diagnosis & treatment for better health outcomes & make this

science flourish in India. We at Genefitletics have been educating people through our scientifically validated content & community driven initiatives. Besides, on demand, we also offer a detailed report for healthcare practitioners that gives unprecedented insights about unique biology of an individual

Since the completion of the Human Genome Project almost 20 years ago, the understanding of DNA has shifted to a realisation that it is not the genes but their functions that determines the state of health or disease. However, microbiome companies in India are still focused on decoding microbial DNA- what organisms are there, not their functions.

They have failed to understand that different organisms can do different things depending upon the environment they live in. Therefore, interventions provided on the basis of microbial DNA leaves a lot of areas uncovered & unaddressed.

Since technology is now taking center stage, the success of microbiome is connected with development of novel methods to provide data driven personalisation. However Indian companies focus on marketing the tests, lack a data driven approach & give a human touch nutrition with genetic or coach counseling. They fail to understand that tests are just a way of collecting molecular data, not a solution in itself. This defeats the entire purpose of nutrition science which is objective & should not be driven by belief systems. As a result, such health interventions lack precision & accuracy.

A number of microbiome companies in India are acting as distributors of B2B clinical grade testing companies & are masking these tests to upsell their supplements without any transformative outcomes.

This is where Genefitletics creates value. We use microbial functions as a focal point to capture biological functions. We have adopted a system biology + machine learning approach to capture a complete picture of the interactions among the different biological components right from the functions of gut, vaginal & oral microbiome to human cells. Our model is completely data driven with no human touch & hence offers precision. We decode functional activity of the microbiome & then inform novel disease modifying interventions.

How can the concept of microbiome help reduce the burden of non-communicable diseases in our country?

We have around 25,000 human genes & 2 million microbial genes, making us 1% human.

Our Gut & mouth harbours 40 trillion & 100 billion microorganisms, making them largest & second largest microbial colonisers respectively. Gut houses the largest compartment of immune cells in the body, performs critical biological functions & transforms our approach towards nutrition, medicine & external environment.

Gut & Oral Microbes transform bioactive molecules in food we eat into secondary metabolites that programme our biology for either health or disease. Improper nutrition & overuse of antibiotics can create Imbalance in gut bacterial communities, or “dysbiosis”, results in production of harmful metabolites & over activation immune responses, triggering low-grade, systemic inflammation & altered genes expression - the root cause of range of chronic diseases & cancer.

Decoding functions of microbiome & determining what specific nutritional ingredients via food molecules or chemicals your microbes need right now so that your both human & microbial genes are rightly expressed is key to keep chronic diseases at bay.

Do you plan to expand your reach globally? How is the microbiome market developing in other countries, and what are the related opportunities and challenges there?

Our expansion roadmap includes extending our geographical footprint in UAE, Qatar & Saudi Arabia.

These countries lack microbiome footprint & are dealing with a number of metabolic, digestive & autoimmune diseases. The current set of interventions in these markets include antibiotics & non-steroidal anti-inflammatory drugs (NSAIDS) & fad diets to manage the disease symptoms.

As such, there is a huge untapped potential & high propensity of spend. However, these markets have specific entry challenges as there are numerous bureaucratic hurdles to be cleared before a formal regulatory approval can be secured.

There is a high adoption rate of microbiome in western world specifically in markets such as the US, UK & Europe. The microbiome knowledge ecosystem there is mature & even healthcare practitioners are including microbiome tests as part of

their diagnosis & treatment. In the past, a lot of companies who had microbial DNA offerings, unfortunately had to close their shops. As such US enjoys oligopoly with only few companies working on decoding functions of microbiome.

Dr Manbeena Chawla

(manbeena.chawla@mmactiv.com)