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Mission: Sequencing a higher organism

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Ganit Labs, a public private partnership between Strand Life Sciences and the IBAB, sequenced the entire genome of Neem tree making it the first institute in India to successfully sequence and analyze the genome and transcriptomes of a higher organism

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High on its achievement of sequencing the genome of Neem tree, Ganit Labs from Bangalore presents a perfect example of a public private partnership making a powerful impact in the life sciences industry. Housed in the Institute of Bioinformatics and Applied Biotechnology (IBAB), Bangalore, Ganit Labs is a very young initiative with a strength of 15 people. The not-for-profit organization, operational since February

Ganit Labs was started when the Government of India solicited proposals to develop a Bio IT lab in India a few years ago. The Government of Karnataka and Strand Life Sciences were chosen to be a part of this initiative. It received `10 crore from the Department of Information Technology, Government of India, and `5 crore from the Government of Karnataka. Strand Life Sciences too invested `5 crore worth in software and marketing services rendered.

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Dr Binay Panda, chief officer and head, Ganit Labs, says, â€œThis model of a public private partnership (PPP) allows us to draw the strengths of both parties involved and at the same time be fiercely independent in pursuing our agenda. In addition to carrying out research, we also aim to be a center attracting and training talent in the form of young students. The location of the lab is a big advantage as we get talented students from the IBAB and, in return, the students are exposed to the

research using cutting-edge tools at our lab.â€?

Speaking about the sequencing of Neem, Dr Panda says, â€œTo the best of our knowledge, this is the first de novo sequencing and analysis of a genome and its various transcriptomes of a higher organism in India using sophisticated next generation sequencing tools. Neem has long been a tree synonymous with Indian culture. Its sequencing will further enable us to study the associated signaling pathways and validate the traditional knowledge, while producing scientific data about its various compounds, including azadirachtin, one of its most potent compounds. We also aim to carry out further research to identify other compounds from sequence data, which later will be used on the basis of their medicinal or pesticidal properties.â€?

The way forward

One of the striking features of this project is the fact that the sequence information generated is slated to be uploaded on an open access portal in the next few months, which will be made accessible to all, allowing scientists and students to utilize this information in their research.

In addition to conducting the projects, the lab aims to be self-sufficient and has undertaken a few sequencing projects for other scientists and organizations. The lab hopes to attract young minds through initiatives such as 'My idea', which allows students to write a proposal on their idea and if selected it is translated into a project.

Ganit Labs has also started another project in close collaboration with the Mazumdar-Shaw Cancer Center to profile oral cancer patients and identify markers associated with oral cancer by comparing the genomes of tumor with that from the normal tissue of the same patients. This can help in the development of a diagnostic for oral cancer.

Manasi Vaidya in Bangalore