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Bhutan to develop Molecular Foundation Model for global diagnostics and drug development

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A joint development exercise for the AI Model and a research and development centre



Viome Life Sciences has signed a Memorandum of Understanding (MoU) with Druk Holding & Investments Ltd (DHI), the investment arm of the Royal Government of Bhutan, and Gelephu Mindfulness City (GMC), the Special Administrative Region of Bhutan, established with its own legal and financial system, to explore the development of a Molecular Foundation Model in Bhutan. The agreement, signed in New York recently, is the first step toward a defined investment proposition and definitive agreements.

Viome would contribute its metatranscriptomic dataset and its expertise in building a Molecular Foundation Model into the effort. A Molecular Foundation Model is an artificial intelligence (AI) system trained on population-scale molecular data. It works as a generator for many healthcare applications, including diagnostics and drug development. For example, it can produce a new diagnostic from a small number of clinically adjudicated samples. It can also generate companion diagnostics paired with a specific therapy, validate drug targets in silico before investing heavily in a molecule, and assess whether a proposed molecule will act appropriately on a known target. Together, these capabilities could accelerate the entire research and development cycle, from biomarker discovery to clinical validation.

For DHI, the agreement supports DH1 10X, its strategy to grow its economic contribution tenfold over the next decade while diversifying beyond hydropower into new areas of energy, technology, and global investment.

Under the agreement, DHI would assist in funding, building, and powering a dedicated compute facility in Bhutan using the country's hydropower. GMC would provide the regulatory home and clinical environment for validation. Viome would use its dataset and lead the model's scientific and technical work, including training Bhutanese scientists and engineers at a planned Centre of Excellence. Any Bhutanese citizen's health data used in the work would remain in Bhutan and be subject to Bhutanese governance.

Image caption- Guru Banavar, PhD, Founding Head of Biomedical AI at Viome Life Sciences, (left), and Ujjwal Deep Dahal, Chief Executive Officer of Druk Holding & Investments