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A*STAR and MojiaBio to develop next-gen sustainable biomanufacturing platform in Singapore

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Demonstrating how synthetic biology can unlock cost-effective productions of scalable value-added ingredient alternatives

MojiaBio, a leading innovator in green chemistry and sustainable biomanufacturing, will be developing an SGD 44.8 million state-of-the-art Sustainable Biomanufacturing Technology Platform (SBTP) with the Agency for Science, Technology and Research (A*STAR) in Singapore.

By integrating advanced synthetic biology and bioprocessing innovations, the SBTP aims to position Singapore as a global leader in sustainable biomanufacturing, accelerating the transition to a circular bioeconomy and net-zero future.

Unlike other existing bio-based molecules in the market, the SBTP aims to pioneer the production of a range of high-value bio-based molecules that are cost-competitive and serve the needs of various industries. This is made possible due to the innovative use of cost-effective sources like methanol and ethylene glycol, which enables the platform to produce scalable, sustainable alternatives to conventional chemical processes. This includes the production of 1,3-propanediol (PDO), a key ingredient for a broad array of industries such as skincare products, coatings and biodegradable plastics.

The SBTP leverages advanced synthetic biology and integrates the National University of Singapore (NUS)' computational modelling expertise to engineer enzymes and microbial strains, optimising them as biocatalysts. Unlike conventional fermentation methods, the platform operates independently of its host cell metabolism, which significantly enhances energy efficiency, scalability, and sustainability while reducing production costs.