

BIOTRANSFORMATION

FRONTIERING NEXT GENERATION BIOALTERNATIVES

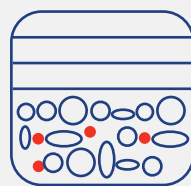
SIFBI's Biotransformation capability group's interdisciplinary approach develops novel sustainable biotechnology and validates industry-ready solutions for next generation bio-based ingredients. We specialise in biocatalysts, solid-state fermentation, submerged fermentation and downstream processing. Our expertise across these different facets accelerates process development and reduces time-to-market.

We enhance the synthesis of high-value products with our aptitude for controlling the performance of microorganisms through optimisation of growth conditions and bioreactor configurations. The group's agri-food sidestream valorisation capabilities combine deep knowledge in extraction, biomass conversion and degradation, furthering the circular bioeconomy.

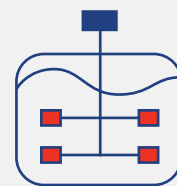
Capabilities



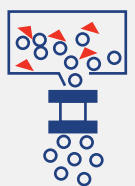
Biocatalysis



Solid-state
Fermentation

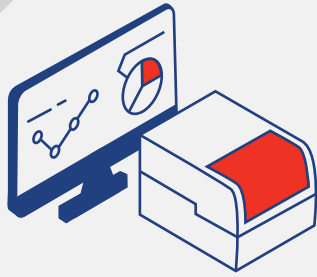


Submerged
Fermentation

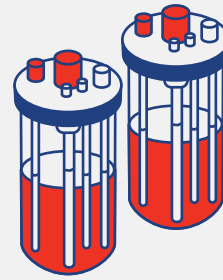


Downstream
Processing

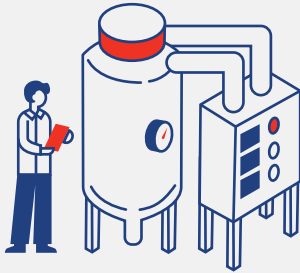
Our Differentiating Factor – Sustainable Bio-manufacturing



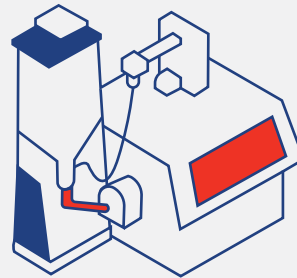
Screening & DOE optimisation



Bioprocess design monitoring, control, modelling & automation



Scale-up and scale-down simulation



Cell separation *in situ*, product recovery

Experiential Journey

Generating Value through Biotransformation

In the search for novel alternative food sources, microalgae have emerged as an interesting option for ingredient development. SIFBI's Biotransformation team develops and optimises conditions and bioprocesses conducive for microalgae growth, as a sustainable urban source of ingredients for food product development.

Besides this, Singapore and other countries face an increase in agri-food sidestreams and food wastage. Fruit waste, for example, can be converted into high-value specialty ingredients and products for use in many industries, by combining Biotransformation and SIFBI's Discovery and Strain Engineering expertise to create an optimal microbial cocktail and an effective biomass conversion platform.



For 170 years, Dole has committed to its corporate mission to provide nutritious products that are sustainable for the planet while focusing on product quality and traceability. Our new venture, Dole Specialty Ingredients, focuses on fruit waste valorisation to high-value natural products. We plan to continue to grow this relationship with SIFBI, maximising the value of our fruit side streams through upstream, downstream and application development technologies. Moving forward, I believe that we can drive next-generation innovation together."

Mr Weitze Ooi, Managing Director, Dole Specialty Ingredients

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