

Singapore bioengineers yeast microbes as targeted drug delivery systems

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Artificially engineered smart yeast to revolutionise how microbial communities are controlled for health purposes



Researchers from the Yong Loo Lin School of Medicine (NUS Medicine) in Singapore have developed a groundbreaking way to engineer yeast (*Saccharomyces cerevisiae*) to create microbial communities that can perform complex tasks and self-regulate their composition in response to external signals.

By reprogramming how yeast cells switch types, the team enabled these micro-organisms to form cooperative groups that can perform complex tasks and self-regulate their composition based on external signals. These engineered yeast cells have the potential to help transform personalised healthcare by delivering tailored treatments that adapt to a patient's condition in real time.

This approach could lead to more effective therapies with fewer side effects, paving the way for significant advancements in medical treatment while also significantly enhancing the efficiency, sustainability, and scalability of biotech applications.

The research team is now fine-tuning their results, with a focus on optimising how the yeast communities adapt their actions in response to various disease markers. They will then explore the efficacy of using this autonomous system to produce health-conferring molecules for treatment of specific diseases.