



**Development of genetically engineered *S. cerevisiae* for increased production of fatty acid ethyl ester (FAEE)**

TECHNOLOGY AVAILABLE FOR TRANSFER

**UNMET NEED AND OPPORTUNITY**

Our dependency on fossil fuels is depleting the level of these natural resources rapidly. Moreover, the use of fossil fuels causes negative consequences over the environment, thus there has been a steady surge in the development of renewable form of energy.

*The present invention is related to development of microbial strain of Saccharomyces cerevisiae for synthesizing value-added compounds like Fatty acid ethyl esters (FAEE) to minimize the impacts of overusing fossil fuels and other harsh chemicals. Fatty acid ethyl esters are a class of biofuel precursors that can be produced from renewable resources.*

**TECHNOLOGY**

The present invention provides a high-level FAEE producing *S. cerevisiae* strain. The final engineered strain NGYT of *S. cerevisiae* carried 11 genetic modifications and produced 26 mg/L and 1 g/L of FAEE before and after glucose optimization respectively. This titer was further scaled-up to reach 5 g/L in fed-batch bioreactors, which is the highest reported FAEE titer achieved from *S. cerevisiae* with glucose as carbon source.

**UNIQUE SELLING PROPOSITIONS**

- **Quality** – biocompatible and biodegradable.
- **Enhanced efficacy** – higher FAEE production efficiency up to 5 g/L from *S. cerevisiae*.
- **Cost effective** –FAEE serves as a renewable and cost-effective resource.
- **Ease of use** – easy to prepare, biocompatible.

**APPLICATION**

Automobile industry, Cosmetics, Lubricants, any other sector requiring oleochemicals.

**INTELLECTUAL PROPERTY**

Patent Application is filed in India.

**LICENSING OPPORTUNITY**

BCIL is looking for suitable industrial partner for commercialization of this genetically engineered *S. cerevisiae* for increased production of fatty acid ethyl ester.

**CONTACT:**

Dr. Purnima Sharma, Managing Director  
BIOTECH CONSORTIUM INDIA LIMITED  
V Floor, Anuvrat Bhawan, 210, Deen Dayal Upadhyaya Marg,  
New Delhi:110002 Phone: +91-11-23219064-67,  
Fax: +91-11-23219063  
Email: tto.bcil@biotech.co.in & info.bcil@biotech.co.in  
Website: www.biotech.co.in