Professur für Bioverfahrenstechnik
Campus Straubing für Biotechnologie und Nachhaltigkeit
Technische Universität München

Master's Thesis

Integrated Cell Disruption and Extraction of Lipids and Resveratrol from *Yarrowia lipolytica*: Application of Supercritical CO_2 Technology

Yarrowia lipolytica is a yeast used for producing lipids and, more recently, resveratrol. Supercritical CO2 is already employed industrially to extract lipids from the cell broth. However, these products are partly inside the cell and cannot be extracted immediately. To access them, the cells need to be lysed. A new approach combines both steps into one.

Aim of the thesis

The aim of this thesis is to develop an innovative one-step process for the simultaneous lysis and extraction of lipids and resveratrol.

To achieve this, the thesis will be divided into two work packages:

1) Optimising $ScCO_2$ extraction at the Professorship BTX in Freising
2) Analysis and Test of the product composition at the Professorship BVT in Straubing

Requirements

- Proactive way of working
- Independent planning of experiments
- High motivation
- Practical problem-solving skills
- Advanced laboratory skills
- Basic fermentation skills
- Basic analytic skills (e.g., HPLC)
- Team player

Application

Please send your application documents (CV and Cover Letter) to M. Sc. Ulf Stegemeyer (ulf.stegemeyer@tum.de) by December, 2025. Feel free to reach out to him with any questions regarding this position. Start of the project: December 2025

Privacy policy

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