Chair of Bioseparation Engineering
TUM School of Engineering and Design
Technical University of Munich

BioSE

Master's thesis

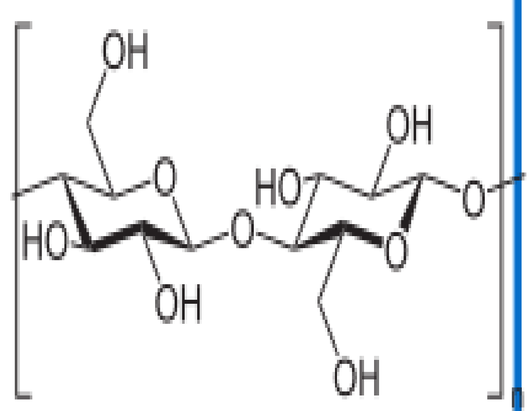
Process Optimization for extraction of Polysaccharides and Protein

Keywords: Basidiomycetes fermentation | HPLC | protein | polysaccharides

Project Description

Biomolecules such as polysaccharides and protein play a vital role in different industry due to their various applications such as immunomodulatory agents, antioxidant or antitumor agents in pharmaceutical industry; as dietary supplements or moisturizing agents in food or cosmetic industries. They have many functional uses in biotechnology, agriculture and biomedical industry.

Polysaccharides and protein from filamentous fungi are a good sources for such applications as they are present in abundant and also such fungi can be grown in ecofriendly and sustainable ways. But the extraction of polysaccharides and proteins from them is limited due to their complex nature.



The objective of this project is to develop and optimize the extraction of polysaccharides and protein from fungi, using conventional as well as novel extraction technologies.

Tasks

1. Literature review
2. Cultivation in shake flasks with the aim of a scale up to a fermenter and optimization of the process
3. Development of an HPLC method for analyses of polysaccharides and protein
4. Process optimization for extraction of polysaccharides and protein

Fermented samples used for DSP

Profile

- Structured and independent work
- Motivation to work as a team
- Master student in biotechnology (IBT, MBT), biochemistry, biology, chemistry or similar
- **Start date**: as soon as possible or in Oct
- Language: English

Sabrina Styblova | s.styblova@tum.de | Chair of Bioseparation Engineering | Room MW2437

Bhagyeshri Ulhas Mantri | b.mantri@tum.de | Chair of Bioseparation Engineering | Room MW2437