

Semester/Master's thesis

Enzymatic cell disruption of filamentous fungi

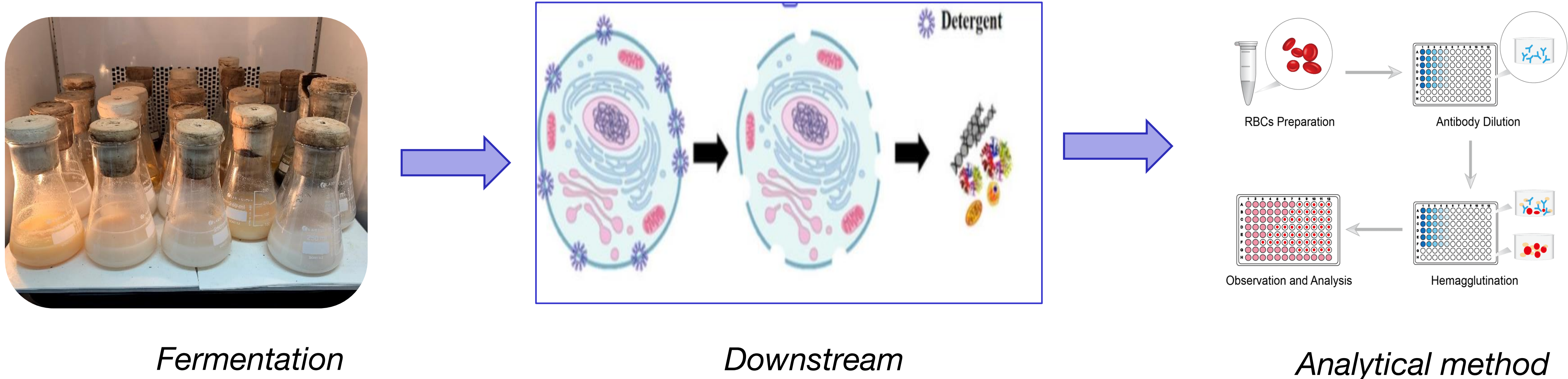
Keywords: Basidiomycetes | Enzymes | Protein| Polysaccharide

Project Description

Filamentous fungi in particularly basidiomycetes or wood rotting fungi are beneficial to humankind as they have a lot of biomolecules such as protein, polysaccharides which have different applications in food, the cosmetic industry and so on. The project aims to ferment these fungi sustainably, with a later focus on extracting and separating these biomolecules using novel and conventional methods

The focus of my project is on particularly lectins (protein) and β -glucans (polysaccharides) to extract and separate them from fungi using efficient downstream unit operation.

The part of the project here is to study the cell disruption of fungi with different enzymes which will break down the tough cell wall of the fungi. It is also important to study the enzyme kinetics for the disruption of cell wall. And also important to study the combination of enzymes and also combine different cell disruption method for the best possible cell disruption.



Research Objective

1. To study different enzymes for the cell wall disruption
2. To study enzyme kinetics
3. To study the combination of enzymes for cell disruption
4. To combine best combination with other method
5. Analytical Technique: SDS page, Protein analytical technique, Hemagglutination assay.

Profile

- Structured and independent work
- Motivation to work as a team/ willing to learn
- Master student in chemical engineering, biotechnology (IBT, MBT), Pharmaceutical biotechnology biochemistry, chemistry, microbiology, or similar
- **Start date:** as soon as possible or in Oct
- Language: English
- Ideal, but not required: Lab experience