

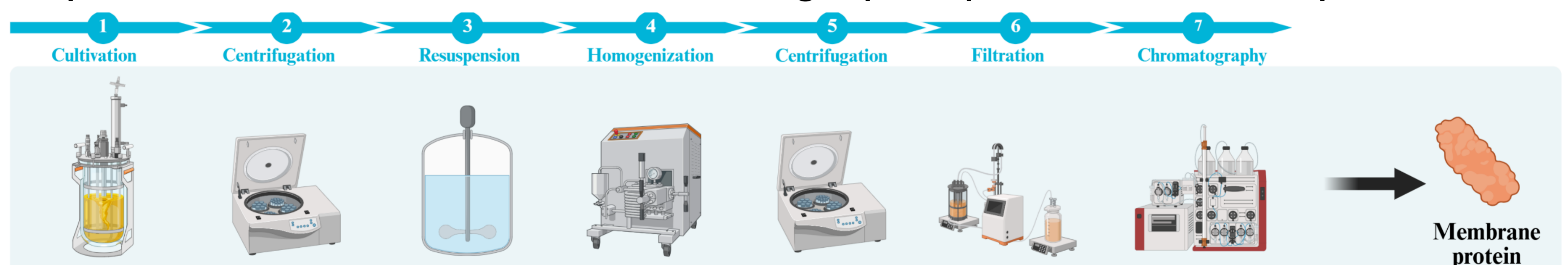
Masterthesis

Production and Purification of membraneproteins using *E. coli* and Chromatography

Project Description

In this master's thesis, several membrane proteins will be recombinantly produced using *Escherichia coli* as an expression host. These membrane will then be tested by a project partner as potential vaccines.

Upstream processing will include the evaluation of key expression parameters and a scale-up from shake flask cultivation to controlled fermentation. For downstream processing, affinity chromatography will serve as the primary capture step, followed by additional purification methods to achieve the required final product purity. Depending on the obtained yields and purity levels, systematic optimization of individual process steps will be performed to ensure efficiency and robustness. To test new approaches of protein purification, magnetic nanoparticles will be compared to the established chromatographic purification set-up.



Your Tasks/Methods

- Fermentation of *E. coli*
- Chromatographic purification using Äkta systems up to pilot scale
- Magnetic nanoparticles-based protein purification
- Analytics
 - SDS-PAGE
 - Various Assays (CDW, Protein)

Your Profile

- Independent and structured way of working
- Experience with laboratory work
- Student in the field of biotechnology, biochemical engineering chemistry or similar

Contact

Start: From now

Language: German/English

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