

Christian Doppler Laboratory for Sustainable Manufacturing of Functionalized Biopharmaceutical Peptides

Our CD Laboratory integrates fundamental and applied research to transform biopharmaceutical peptide manufacturing through innovative, sustainable biotechnological processes, making future therapies affordable and accessible to all patients. The focus is on recombinant production of peptides containing non-canonical amino acids using *Escherichia coli* as a cost-effective and scalable alternative to conventional chemical synthesis. Our interdisciplinary work combines molecular biology, expression system engineering, advanced fermentation, and downstream processing.

We offer a

PhD position

in molecular biology and bioprocess engineering to investigate

Genetic code expansion, host physiology and peptide production process: an interplay study

Start: as soon as possible

Employment: 30 hours per week for 3 years (with option for temporary extension)

Salary: ca. 2,800 € per month (14 times per year), including social, health and pension insurance

Workplace: BOKU University, Institute of Bioprocess Science and Engineering, Muthgasse 18, 1190 Vienna, AT

What to expect: You will join an ambitious research team in a well-equipped scientific environment with strong team spirit, vivid discussions, and close collaboration with a leading biotech company. The PhD position is embedded in the Doctoral School *Bioprocess Engineering*, offering training and networking with other doctoral researchers.

YOUR RESEARCH TASKS

The research will focus on harmonizing the components of the genetic code expansion technology with the *E. coli* host cell physiology to optimize production of peptides containing non-canonical amino acids in bioreactor cultivations. To achieve this your tasks will be:

- Construct gene expression cassettes using cutting-edge DNA cloning and assembly methods
- Quantify nucleic acids, peptides and non-canonical amino acids using state-of-the-art analytical techniques and further develop methods
- Engineer host cells - building on prior characterizations - to integrate genetic-code-expansion machinery into cellular physiology
- Perform bioprocess engineering at different scales to optimize production and process performance
- Present research results at regular project and collaboration meetings as well as international conferences

REQUIREMENTS

- Master's degree in biotechnology, biochemical engineering or related fields
- Solid knowledge and hands-on experience of state-of-the-art molecular biology techniques for recombinant protein production and/or bioprocess engineering
- Strong interest in expanding the standard genetic code with non-canonical amino acids
- High motivation to reach ambitious goals, learn new techniques and develop cutting-edge methods
- Excellent communication skills for interdisciplinary teamwork; confident presentation of results in oral and written form

HOW TO APPLY

Please send your application (motivation letter, CV, master's degree certificate) to: DI Dr. Monika Cserjan, Head of CD Laboratory (monika.cserjan@boku.ac.at) and PD Dr. Birgit Wiltschi (birgit.wiltschi@boku.ac.at).