



ACIB – the Austrian Centre of Industrial Biotechnology – is one of the leading research centres in the field of industrial biotechnology. ACIB is dedicated to joint research at the industrial-academic interface. Seven Austrian Universities and more than 50 leading industry partners are working together within the ACIB research programme.



SECRETTERS – *A new generation of microbial expression hosts and tools for the production of biotherapeutics and high-value enzymes* – is a recently granted Marie Skłodowska Curie European Innovative Training Network. SECRETTERS is implemented by a European Consortium of universities, research institutions and companies in the field of biotechnology. Main objectives of SECRETTERS are (i) to design **powerful new microbial platforms for production of disulphide-bonded proteins**, (ii) to develop and characterize **super-producing platforms for emerging new-format biotherapeutics** and (iii) to acquire **interdisciplinary and intersectoral skills**. The microbial platforms include *Escherichia coli*, *Bacillus* species and the yeast *Pichia pastoris*.

acib GmbH offers in Vienna, Austria, a

PhD position on

Impact of cultivation conditions on organelle-specific redox potentials and stress in recombinant protein producing *Pichia pastoris* (ESR11)

Starting date June/July, 2019

Project description

Yeasts such as *Pichia pastoris* are important hosts for production of industrial enzymes and biopharmaceutical proteins. SECRETTERS aims to develop radically different strategies for production of disulphide-bonded proteins in microbial production hosts.

Objectives:

- 1) Studying the impact of different cultivation regimes (e.g. substrates, growth rates, oxygenation) on the quality of disulphide-rich target proteins, oxidation-related changes of the cellular proteome and organelle-specific redox potentials.
- 2) Investigate the impact of cultivation regimes on oxidation-related product heterogeneity
- 3) Assessing the robustness of redox-engineered *P. pastoris* strains using adapted cultivation regime simulating industrial processes.
- 4) Application of obtained data for modelling of eukaryotic redox networks (together with ESR4 at University of Kent, UK).

Research will take place in the working group “Microbial Biotechnology” at the Department of Biotechnology of the University of Natural Resources and Life Sciences Vienna (BOKU) <http://www.biotec.boku.ac.at/15653.html>

Methodology:

- Cultivation of *P. pastoris* in small scale and bioreactor.
- Analysis of product quality and quantity using suitable analytics methods.
- Investigation of the impact of fermentation conditions (media, aeration) on ROS formation and oxidation-related product heterogeneity in *P. pastoris* bioreactor cultivation.
- *In vivo* measurement of redox conditions with fluorescent sensors (by flow cytometry).
- Integration of the quantitative redox data into the metabolic model developed at University of Kent

Your benefits

- Be part of a highly interacting interdisciplinary project team – **structured secondments** to other project partners are planned
- Start to build up your **scientific network** – meet and exchange regularly with 14 other PhD students working in the joint project
- Join an embedded and customized **education programme** – gain scientific/technical skills as well as transferable skills to complement your qualification

Your requirements

- **Master's degree** or equivalent in **biotechnology, molecular biology, biochemical engineering, biochemistry, or similar study**
- Strong background in cell biology, biochemistry, biotechnology or related disciplines.
- Practical experience in bioreactor cultivations and/or molecular biology requested, and practical experience and scientific interest in systems biology and bioinformatics applications desired.
- **Specific Eligibility Criteria** valid at time of recruitment on the H2020 Marie Skłodowska Curie programme:
 - The applicant has to be within the first four years (full-time equivalent research experience) of their research careers and have not been awarded a doctoral degree.
 - Mobility rule: The applicants may not have resided or carried out main activity (studies, work, etc.) in Austria for more than 12 months in the 3 years prior to the recruitment date.
- **Excellent skills** in spoken and written **English**, an **organized approach** with strong attention to detail and good communication skills with **ability to work well in teams**.
- **Travel** abroad for training purposes is part of the training programme

We are looking forward to receiving **your application in pdf-file** comprising a **detailed CV, publication list, copies of your university degree documents, and contact details of up to 3 academic referees.**

Please submit the application via our application portal application.acib.at (ref. 02_2019).

Application deadline: 1. March 2019

This job advertisement addresses qualified male and female persons equally. ACIB is not part of any collective agreement under Austrian law. It is intended to offer a minimum yearly gross payment of EUR 31,700.-- for the PhD-Position advertised. According to the ITN rules a Mobility and, if eligible, Family Allowance are scheduled in addition.