

Department of Biotechnology

Institute of Bioprocess Sciences and Engineering

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To interested Master students
in Biology, Biotechnology and (Bio)Engineering

Vienna, 2023-05-11

Anti-cancer protein production

Research internship and **Master thesis**
at the **Institute of Bioprocess Sciences and Engineering**
in cooperation with the University Hospital Aachen (Germany)

Dear interested Students,

Abstract: Cancer and its therapy are major topics in healthcare, life sciences and bioengineering. Drug development has seen major improvements in the last decades but due to the plethora of cancer types and variants, there is no single silver bullet to cure the disease. Also, producing novel medicines like antibody-drug conjugates is pushing conventional host systems like Chinese hamster ovary cells or bacteria to their limits, e.g. because protein complexity or toxicity. Here, we will produce a novel protein to be used in cancer therapy in plants and plant cells, purify it and subjected to in vitro activity testing. And you can be part of this exciting development.

Your tasks:

1. Clone the coding sequence of the anti-cancer protein into different expression vectors
2. Express the protein in plants and plant cells
3. Extract and purify the protein to a relevant level facilitating initial activity testing
4. Optional: conduct in vitro activity testing at the University Hospital Aachen
5. Write a glorious thesis and publication 😊

Duration: The initial internship will take 1-3 months (depending on your availability) and the master thesis will be 6 months. In the course of the project, weekly meetings with your supervisor as well as flexible on-demand meetings and intensive exchange with colleagues will ensure the success of your work.

Requirements: The student successfully applying for this project has good basic knowledge in biotechnology and protein analytics and is keen to gain more insights into innovative plant molecular farming methods in the context of cancer therapy development. S/He is skilled in written and spoken English to familiarize herself/himself with the relevant protocols and to fluently communicate within the international environment at IBSE.

Contact: For further questions and applications, please contact Johannes Buyel

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