Master Thesis Project Molecular Pharmacy

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Did you know that parasites have evolved smart ways to overcome complement mediated killing? By acquiring regulators, expressing proteases or development of parasite-encoded proteins specifically targeting different complement components, they are able to inhibit the complement system at different stages.
Therefore, some of the parasitic tricks are good lead structures for the generation of novel immune modulators!

We are looking for a motivated master student (internal or external) to further investigate the development of parasite derived inhibitors.
In this project you will learn and use common molecular biology techniques like:

- Gene cloning (PCR, DNA restriction, forming new plasmids by ligation and use of DNA electrophoresis)
- Transformation of recombinant plasmids into E. coli and other cell systems
- Protein expression, protein purification (with Fast Protein Liquid Chromatography FPLC and High Performance Liquid Chromatography HPLC) and protein characterization (SDS-PAGE, Western Blot, nanoDSF, etc.)
- Characterization also includes testing of the recombinant proteins in different Chromogenic Substrate, ELISA and Haemolytic Assays.
- Kinetic studies with Surface Plasmon Resonance (SPR) and Biolayer Interferometry (BLI).

Furthermore, other methods that are established in our laboratories can be learned and used for the development of the whole project. Other potential methods would be: Phage Display, Peptide Synthesis and development of a directed evolution approach.

Further information can be provided upon request.

Internal as well as external students are welcome to apply for the proposed project.

Send your application to Aleksandra Blagojevic (Aleksandra.blagojevic@unibas.ch)