

Design and Development of New Peptide Conjugates based on Compstatin for Improved Pharmacokinetics

The compstatin family of peptides, first discovered in the University of Pennsylvania in 1996, are potent modulators of the complement system and have recently entered the clinic (pegcetacoplan, Empaveli/Syfovre, Apellis). However, there is substantial room for improvement in the pharmacokinetic profile. This project will entail the design and development of new peptide-conjugates based on compstatins for improved compound half-life and solubility.

Students will obtain training in state-of-the-art methods, including:

- Automated solid-phase peptide synthesis
- Chemical synthesis of non-natural peptide bioconjugates
- Chromatography and mass spectrometry (HPLC, LCMS)
- In vitro assay of peptide activity (enzyme-linked immunosorbent assays)
- Biophysical analysis of peptide-protein interactions (SPR, ITC, BLI, SEC-MALS)
- In vitro assessment of peptide pharmacokinetic properties

This project will be suitable for motivated master`s students (University of Basel, or external) with an interest in working at the interface of chemistry and biology, while learning state-of-the-art techniques that are invaluable in modern pharmaceutical research.

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