

Application of 5C6 on artificial materials for the prevention of unintended complement activation and the purification of complement proteins from blood

As part of the human innate immune system, the complement system is crucial for protection against pathogens. However, in case of contact between blood complement proteins and artificial surfaces (e.g. during hemodialysis or at the surface of implants), complement activation can lead to harmful inflammation reactions. Hence, this project is focused on the protection of artificial surfaces by their modification with peptides to prevent complement activation. In addition, a similar strategy can be applied to simplify the purification of complement proteins from blood of different species.

The suitable student will receive training in several methods including:

- Production of Bioactive Peptides (SPPS, LC-MS)
- Column Preparation
- In vitro Complement Assays (ELISA)
- Purification of Blood Products
- Biophysical Assays (MST)
- Bioconjugation (Click Chemistry)

This project is suitable for internal and external master's students with an interest in advanced research in the pharmaceutical field. Applications can be sent directly to Jannes Felsch (jannes.felsch@unibas.ch).