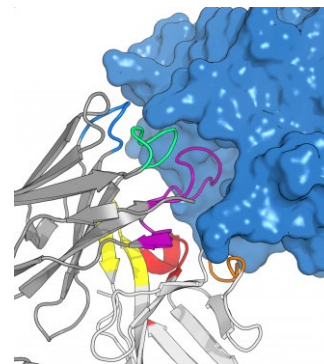


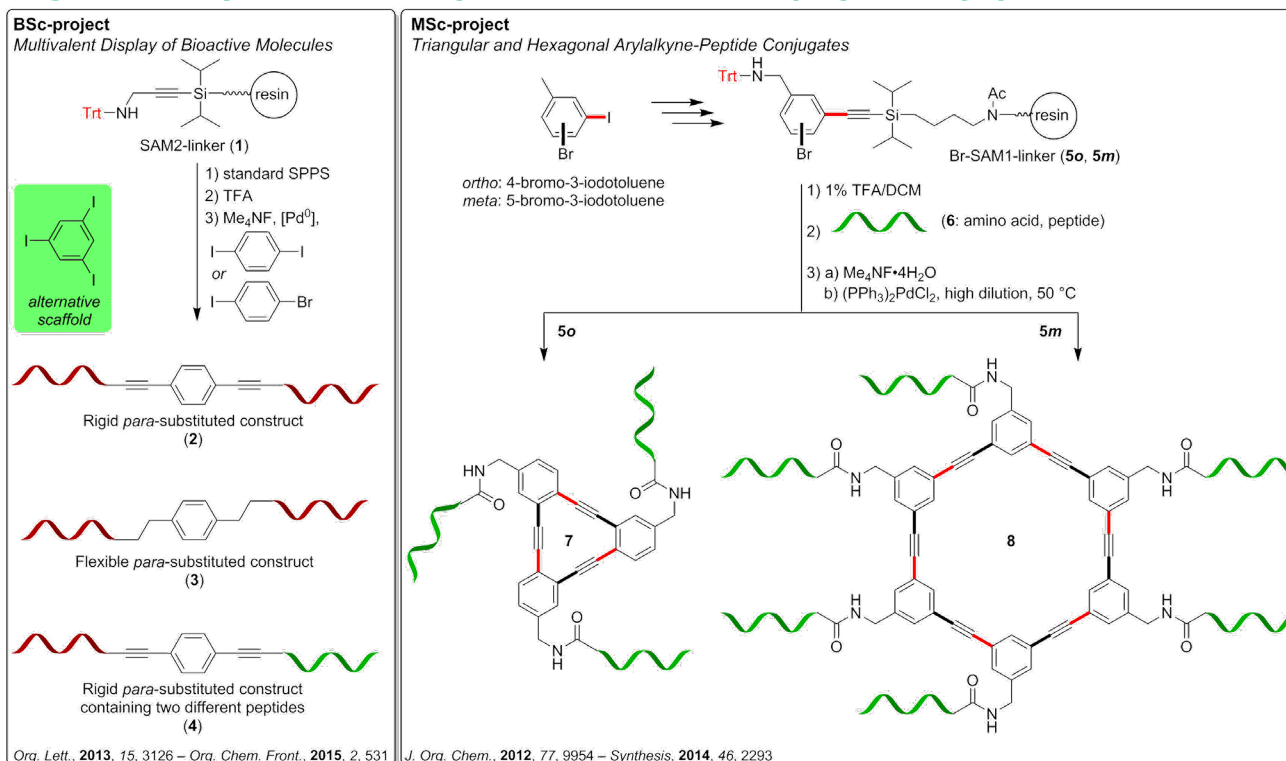
Group : Nanochemical Biology
Project : **Alkyne-Peptide Conjugates as Novel Antibacterial Agents**
Supervisors : Bauke Albada

Keywords: arylalkynes, peptides, solid phase synthesis, bioconjugates, multivalent effect

Peptides interact with a variety of biological events, ranging from the disruption of disease-related protein-protein interactions to peptide-conjugates with medicinal properties. Many protein-protein interactions are dictated by accumulation of the multiple interactions that cannot be obtained with single peptides. For example, antibodies use a total of six (!) loop-like structures to recognize a pathogenic target in order to trigger your immune-system. Importantly, the six so-called complementarity determining regions emerge from a protein-scaffold that directs them in the appropriate direction (see image right). A major goal in medicinal chemistry is the development of methods that (i) allows the convenient preparation of multivalent peptide-constructs, and (ii) a system that allows the uncomplicated comparison of the activity of a rigid and flexible system. Both goals are addressed in this study.



The goal of this project is to prepare alkyne-peptides bio-conjugates of which the biological activity is enhanced by the simultaneous display of the peptides.



Synthetic strategies for alkyne-peptide conjugates as novel antibacterial agents.

Topics and Techniques related to this project

- Synthesis of the appropriate SAM-linker; this involves working with strong bases, protecting-group manipulations.
- Synthesis of alkyne-peptide conjugates by means of solid-phase synthesis.
- Perform a one-pot cleavage-click conjugation reaction with a variety of iodoaryl moieties to make multivalent conjugates.
- Prepare rigid and flexible derivatives.

Information

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