GESELLSCHAFT DEUTSCHER CHEMIKER
ORTSVERBAND HANNOVER

Einladung zum GDCh-Colloquium des Ortsverbandes Hannover

Das Colloquium findet um 17c.t. im Dr.-Oetker Hörsaal (Raum 007, Geb. 2504) der Leibniz Universität Hannover, Physikalische Chemie, Callinstraße 3A, 30167 Hannover statt.

16.04.2026 **Prof. Dr. Christina Lamers**,
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The power of preorganized peptides – for therapeutic application and more

Peptides can form exceptionally specific and highly affine interactions to proteins and surfaces, which have raised the interest towards their use as therapeutic compounds. However, peptides have traditionally been perceived as poor drug candidates due to unfavorable pharmacokinetics, e.g. limited plasma stability, membrane permeability and short circulation half-life. In recent years, general strategies to tackle the pharmacokinetic shortcomings have been established[1], further fueling the success of peptide therapeutics. Especially, macrocyclic peptides have received special attention due to their preferred stability, higher affinity, and higher cell permeability. Importantly, cyclic peptides are drug modalities, which can address so called 'undruggable' targets characterized by large and flat protein surfaces lacking binding pockets, e.g. protein-protein-interfaces (PPI). Especially in the complement system, a multi-protein cascade of the innate immune system involved in inflammatory diseases, PPI are promising targets, and the field of complement therapeutics has yielded two remarkable approvals of cyclic peptides (Pegcetacoplan and Zilucoplan) in recent years. Both compounds are the first which have been evolved by display methods targeting PPI and reaching approval as drug. Our group focuses on the development of cyclic peptides targeting the complement system by using chemically modified phage display and computational design. Different cyclization strategies[2] and systematic structure-activity-relationship studies allow us to optimize stability and affinity of the peptides, reaching sub-nanomolar affinity[3]. To develop the compounds towards therapeutic application, we investigate their plasma stability, functional efficacy, and cell permeability., which will be exemplified in two recent projects developing complement modulators for autoimmune and rare inflammatory diseases.

[1]Lamers C. (2022). Future Drug Discovery, 4 (2).
[2]Bechtler C, Lamers C. (2021) RSC Med Chem, 12(8).
[3]Lamers C, et al. (2022). Nat Commun,13(1)

Prof. Dr. Jens-Uwe Grabow
Vorsitz OV Hannover

Vor dem Colloquium findet ab ca. 16 c.t. eine ‚Kaffeerunde' mit dem Vortragenden in der Bibliothek des Instituts für Physikalische Chemie, Callinstraße 3A statt.