PhD Program between Freie Universität Berlin (FUB) and the China Scholarship Council (CSC)

Open PhD Position at Freie Universität Berlin, offered only to Chinese CSC scholarship candidates 2027

Department/Institute: **Department of Biology, Chemistry, Pharmacy, Institute of Chemistry and Biochemistry, Takustr. 3, 14195 Berlin**

Subject area: **Synthetic Organic Chemistry / Natural Product Synthesis / Medicinal Chemistry**

Name of Supervisor: **Prof. Dr. Mathias Christmann**

Number of open PhD positions: *1*

Type of the PhD Study: Full-time or Sandwich-Model

Project title: Synthesis and Biological Evaluation of Antiviral Meroterpenoids

PhD Project description:

This PhD project will develop efficient synthetic routes to phloroglucinol meroterpenoids and their analogues as potential antiviral leads against respiratory syncytial virus (RSV) and related respiratory pathogens. Building on the first chemical synthesis and biological evaluation of cleistocaltone A, the work will combine biomimetic strategy, natural product total synthesis, late-stage diversification and cell-based antiviral testing. Key goals are to improve access to scarce meroterpenoids, control macrocyclization and stereochemistry, and prepare focused analogue libraries around the phloroglucinol and terpene motifs.

Synthetic compounds will be evaluated for antiviral activity, cytotoxicity and structure-activity relationships. The resulting data will guide iterative molecular design and the selection of candidates with improved potency and selectivity. By connecting scalable synthesis with virological evaluation, the project aims to establish meroterpenoids as a platform for identifying candidates for new treatments of RSV and related respiratory diseases.

[1] L. Wiese, S. M. Kolbe, M. Weber, M. Ludlow and M. Christmann, Synthesis and biological evaluation of cleistocaltone A, an inhibitor of respiratory syncytial virus (RSV), *Chem. Sci.* 2024, 15, 10121-10125, DOI: 10.1039/D4SC01897D.

Language requirements:

- IELTS: 6,5 oder TOEFL: 95 ibt

Academic requirements:

Master's degree in Chemistry or a closely related field. A strong background in organic and synthetic chemistry is required. Practical experience in organic synthesis, natural product synthesis and/or catalysis is desirable. Experience with standard methods for the purification and characterization of organic compounds is expected.

Information of the professor or research group leader (website, awards etc.):

Prof. Dr. Mathias Christmann is Full Professor of Organic Chemistry at Freie Universität Berlin and head of the Christmann Research Group at the Institute of Chemistry and Biochemistry. His research focuses on synthetic organic chemistry, natural product total synthesis, the development of new synthetic methods, organocatalysis and sustainable chemistry. He received the Carl Duisberg Memorial Prize (2013), the DECHEMA Young Scientist Award for Natural Products Research (2012), as well as fellowships from the Fonds der Chemischen Industrie.

Website:
https://www.bcp.fu-berlin.de/en/chemie/chemie/forschung/OrgChem/christmann/index.html

Publications of the group:
https://www.bcp.fu-berlin.de/en/chemie/chemie/forschung/OrgChem/christmann/Publications/index.html

Information on FU Berlin:
https://www.fu-berlin.de/universitaet/leitbegriffe/filmportraet/filmportraet_englisch_lang/index.html

Please note:
In a first step, the complete application should be uploaded to the online portal (https://fuberlin.moveon4.de/form/60acfece5d328710e40bdbd5/eng) for evaluation by January 15th, 2027.