



Der Vorsitzende des Promotionsausschusses

EINLADUNG

Hiermit lade ich ein zum öffentlichen Promotionskolloquium von

Herrn M.Sc. Christoph Porten

Mikrobielle Naturstoffe

(Prof. Dr. Rolf Müller)

am

Dienstag, 16. Dezember 2025, 14:00 Uhr s.t.

per Videokonferenz: Link für MS Teams: <https://tinyurl.com/35da58mh>

Raum für die Prüfung: HIPS, Gebäude E8.1, Raum 0.27 (EG)

Thema der Dissertation:

Analytical Methods for Natural Products Characterization and Chemical Ecology: Metabolomics and Multi-Omics Workflows in Bacterial Systems

This thesis presents the development and application of bioanalytical strategies using RP-UPLC-HRMS combined with multi-omics and tailored *in vitro* assays to uncover cryptic enzymes, diverse metabolites, or to improve purification across five studies: 1) Darobactin activity was improved, and 2) candidates for leader-cleaving peptidases were identified. 3) Biosynthetic crosstalk was also revealed in *Myxococcus xanthus* DK1622, with Cxhal chlorinating DKxanthene precursors. 4) Untargeted metabolomics of the predator *M. xanthus* revealed prey-specific remodeling of its metabolome. 5) Analytical challenges in the identification, validation and quantification of low-abundance N-terminally formylated peptides in bacterial supernatants, which are capable of activating mammalian immune cells, were overcome.

Saarbrücken, 4. Dezember 2025



Prof. Dr.-Ing. Georg Frey