



Der Vorsitzende des Promotionsausschusses

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## EINLADUNG

Hiermit lade ich ein zum öffentlichen Promotionskolloquium von

**Frau Dipl.-Chem. Olga Metelkina**  
Organische und Pharmazeutische Chemie  
(Prof. Dr. Alexander Titz)

am

**Mittwoch, 5. November 2025, 15:00 Uhr s.t.**

per Videokonferenz: Link für MS Teams: <https://shorturl.at/KaTAe>

Raum für die Prüfung: HIPS, Gebäude E 8.1, Seminarraum EG 0.27

### Thema der Dissertation:

**Novel Therapeutic Strategies Against *Pseudomonas aeruginosa*:  
Dual Inhibitors of LecA and LasB and Lectin-Targeted  
Liposomal Drug Delivery**

This work investigates therapeutic strategies targeting *P. aeruginosa* lectins LecA and LecB in two complementary approaches: via small-molecule inhibitors and glycofunctionalized liposomes designed for targeted drug delivery. Novel dual inhibitors simultaneously targeting LecA and LasB were developed, showing improved binding and biological activity. In parallel, glycomimetic ligands of LecA and LecB were conjugated to phospholipids to create lectin-targeted liposomes. These nanocarriers exhibited high binding selectivity and efficiently encapsulated therapeutic agents, including antibiotics and pathoblockers. Overall, the study demonstrates the promise of dual inhibitors and targeted liposomes as innovative therapeutic tools against *P. aeruginosa* biofilm infections.

Saarbrücken, 22. Oktober 2025

Prof. Dr.-Ing. Georg Frey