Hiermit lade ich ein zum öffentlichen Promotionskolloquium von

Frau M.Sc. Mariia Lopatniuk
Pharmazeutische Biotechnologie
(Prof. Dr. A. Luzhetskyy)

am

Donnerstag, 23 Januar 2020, 16:30 Uhr
Gebäude C2.2, Seminarraum 0.24, EG

Thema der Dissertation:

The engineering of heterologous host for natural products overproduction

Streptomyces are a prolific source of diverse bioactive natural products. The first part of this thesis is dedicated to the optimization of the S. albus host strain to increase the natural product production titers through ribosomal engineering. For the first time, we showed the significant impact of the ribosomal engineering on the whole transcriptome of the cell. The second part is dedicated to RiPPs natural products derivatization in Streptomyces hosts via two approaches: the stop-codon suppression and rational codon randomization. By using the first approach, we succeeded in incorporating unnatural amino acids into a potent lantibiotic cinnamycin and have obtained five new derivatives. Additionally, the platform for rational codon randomization was developed, enabling the fast and efficient derivatization of an anticancer RiPP thioholgamide A. This led to the production of dozens of new derivatives. These two approaches proved to be efficient for the RiPPs derivatization and might find its application in bio-orthogonal chemistry, target fishing, and improvement of the pharmacokinetics of the RiPP lead compounds.

Saarbrücken, 09. Januar 2020

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