Ph.D. Project Number	**15**
in Project cluster	Drug Delivery and Biological Barriers
Supervisors + Affiliations	**Prof. Dr. Markus Meyer** UdS Saarbrücken, Department Pharmacology and Toxicology https://www.uni-saarland.de/en/fakultaet-m/pzms/gruppe/pharmakologie-toxikologie/prof-dr-markus-r-meyer.html **Dr. Jennifer Herrmann** HIPS Saarbrücken, Department Microbial Natural Products https://www.helmholtz-hips.de/en/research/teams/team/microbial-natural-products/
Description research focus/environment	The research focus of Prof. Meyer´s group at the Saarland University is (applied) bioanalysis by hyphenated mass spectrometry and in vitro/in vivo toxicokinetics of xenobiotics. His group has a very close collaboration in these terms with the groups of Dr. Herrmann and Prof. Müller at the Helmholtz Institute. They share the analytical platforms as well as the used in vitro and in vivo systems.
Project title	Development and application of bioanalytical workflows in the context of microbiome and infection research
Short description Ph.D. project	Doctoral candidate (DC) 15 will learn and apply diverse bioanalytical techniques for measurement and quantification of drugs and metabolites and performing metabolomics. Non-targeted metabolomics approaches will be based on unselective sample preparation and HILIC as well as reversed-phase liquid chromatography coupled to high-resolution mass spectrometry in negative and positive ionization mode. Targeted metabolomics methods will be used to characterize dysbiosis through metabolic changes in whole bacteria before and after intervention to elicit possible mechanisms in a pathogenesis and thus possible therapeutic options. Mass-spectral analysis for permeability tests in the various TALENTS models and pharmacokinetic data of natural products or pathoblocker compounds tested in the zebrafish model will be the task of this DC. The DC will get expertise in dedicated analytical methods based on liquid chromatography and mass spectrometry.
Secondment	Pharmacelsus GmbH, Supervision: Dr. Klaus Biemel (Managing Director). The secondment will provide experience with research in the field of drug discovery and development and thus provides hand-on experience in working under industrial conditions/regulations.
Required or advantageous skills/competences	MSc (or equivalent) in life sciences, pharmacy; open-minded person motivated to work in a multidisciplinary team
Career perspectives	Scientific career in biomedical or pharmaceutical area in academia, industry, or a University Hospital, e.g., Medical School Saarland
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