

Jieqiang Zhou, B.Sc.

Senior Bioanalyst (LC-MS/MS, Proteomics, Metabolomics)
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Education:

2009 B.Sc. in Pharmacy, Guilin Medical University, China

Positions:

2009 to 2015 Group Leader, Shanghai ChemPartner, China
2015 to 2018 Scientist, Shanghai Green Valley Pharmaceutical, China
Since 06/2018 Senior Bioanalyst, College of Pharmacy, Univ. of Florida



Research: Multiplexed-analysis of polar antibiotics presents a challenge for efficient and specific quantification with liquid chromatography-tandem mass spectrometry (LC-MS/MS). Mr. Zhou is developing novel and efficient LC-MS/MS assays for different antibiotics, β -lactamase inhibitors and antivirals, including their active metabolites. These assays present a cornerstone of novel mechanistic insights on the antibiotics penetration to their bacterial (e.g. periplasmic or intracellular) target site and thereby greatly benefit our lab's NIH/NIAID [R01 AI136803](#) on "Combating resistant superbugs by understanding the molecular determinants of target site penetration and binding" (PI Bulitta).

Specifically, Mr. Zhou developing novel assays and creating data on the permeability of the outer membrane towards β -lactam antibiotics and β -lactamase inhibitors. He is investigating how various outer membrane changes are affecting antibiotic permeability and identifying which structural determinants of antibiotics are contributing to maximizing permeability and minimizing efflux. An additional branch of this research is to investigate strategies of how to *permeabilize* the outer membrane by antibiotic combination therapies. These assays are providing mechanistic insights on this question at the molecular level, which will also greatly benefit our lab's second R01 on combating multidrug-resistant *Acinetobacter baumannii* ([NIH/NIAID R01 AI130185](#)). Overall, this work will provide novel strategies on how to greatly improve the antibiotic target site concentrations and enable us, for the first time, to establish mass balance equations for β -lactam receptor binding, efflux and β -lactamase related hydrolysis at the periplasmic target site. This will substantially support our ability to combat multidrug-resistant Gram-negative 'superbugs'.

Before joining the University of Florida and the Center for Pharmacometrics & Systems Pharmacology, Mr. Zhou has been working for 6 years in the Drug Metabolism and Pharmacokinetics (DMPK) department of Shanghai ChemPartner, a preclinical CRO. In this company, he served as the group leader of bioanalysts. He has been playing a critical role in many projects, including the LC-MS/MS Method Development and provided substantial experience for the quantification of biomarkers, polar and unstable compounds. He is highly familiar with the following LC-MS/MS instruments: API6500, API5500, API4000, Waters UPLC and Agilent 6410. Since 2015, he joined Shanghai Green Valley Pharmaceutical CO, Ltd. Green Valley plans to submit the marketing authorization application of GV-971 for treatment of mild-to-moderate Alzheimer's disease (AD) to the China National Drug Administration on 2018. In this company, Mr. Zhou focused on the development of LC-MS/MS assays for AD-biomarker, oligosaccharide and protein using proteomics and metabolomics.