CURRICULUM VITAE
Yinzhi Lang, Ph.D.

Education

09/2011 to 06/2016 **Ph.D. in Medicinal Chemistry** School of Medicine and Pharmacy, Ocean University of China, Qingdao, Shandong, China. *Advisor: Dr. Guangli Yu.*

Thesis title: Development and application of LC/MS-based methods for the analysis of human milk glycome:

- Developing novel semi-preparative HPLC methods to achieve 26 purified isobaric oligosaccharides from human milk samples, and characterizing their chain structures in-depth by offline ESI-MS/MS.
- Developing a novel combination strategy of glycan labeling and LC-MS/MS for rapid and reliable compositional profiling analysis of human milk oligosaccharides (HMOs, ~200 diverse structures).
- Developing an integrated design for simultaneously isolating and profiling analysis of five types of glycans and glycoconjugates, including HMOs, N-glycans from glycoproteins, O-glycans from glycoproteins, glycosaminoglycans from proteoglycans, and glycolipids.
- Characterizing the expression dynamics of glycans associated with different lactation stages to support future research on optimizing infant formula design.

Preparation and characterization of glycoconjugates from IRA rabbit meat byproducts and sea cucumber:

- Extraction, isolation and identification of chondroitin sulfate C and chondroitin sulfate A (Mw: 13~59 kDa) from IRA rabbit meat byproducts (lungs and ear cartilages) by preparative LC, HPLC and NMR.
- Extraction, isolation and structural characterization of novel *O*-glycan containing mucins from IRA rabbit intestines by offline ESI-MS/MS.
- Extraction, isolation and structural characterization of novel fucosylated chondroitin sulfates (Mw: 2~30 kDa) from sea cucumber by a combination of enzymatic extraction, preparative LC separation, NMR analysis, and bottom-up analyses using ESI-MS/MS to characterize their degraded oligosaccharides as well as using GC-EI-MS/MS to characterize their methylated derivatives.

09/2007 to 06/2011 **B.S. in Pharmacy** School of Pharmacy, Yantai University, Yantai, Shandong, China.

Work experience

8/2021 to present **Research Assistant Professor –** Department of Pharmacotherapy and Translational Research, College of Pharmacy (COP), University of Florida (UF), Orlando, FL.

- Creating novel UPLC-MS/MS assays to characterize the outer membrane permeability and target site penetration and accumulation of multiple antibiotic classes.
- Building the structure-penetration relationships by computational chemistry to optimize antibiotics structures for achieving higher concentrations at the bacterial target sites.
- Developing Quantitative and Systems Pharmacology (QSP) modeling to integrate permeability and ‘omics’ data with bacterial killing, resistance, tolerance and persistence mechanisms.

- Optimizing antibiotic combination dosing strategies to combat multi-drug resistant Gram-negative bacterial ‘superbugs’ in different infection models.

10/2018 to 07/2021 **Postdoc –** Department of Pharmacotherapy and Translational Research, College of Pharmacy (COP), University of Florida (UF), Orlando, FL. *Mentor: Dr. Jürgen B. Bulitta*

- Creating UPLC-MS/MS data for multiple antibiotic classes to validate their PK in hollow fiber infection model (collaboration with Dr. Cornelia Landersdorfer, Monash University, Melbourne, Victoria, Australia)
- Population pharmacokinetic modeling, Monte Carlo simulations and optimal study design for enrofloxacin and florfenicol in the giant danio (*Devario aequipinnatus*) following oral and bath administration (collaboration with Dr. Roy P.E. Yanong, UF-IFAS, Tampa, FL).
- Characterizing the outer membrane permeability of 6 β-lactams to combat *New Delhi Metallo*-β-lactamase and *CTX-M*-Co-producing *Klebsiella pneumoniae* (KP).
- Developing novel UPLC-MS/MS assays to characterize the intracellular penetration and accumulation of antiviral agents (galidesivir, favipiravir, Merck EIDD-1931, and remdesivir) and their active neo-nucleotide triphosphate metabolites. Developing QSP modeling to characterize the metabolism pathways and optimize therapy regimens, to combat *SARS-CoV-2*. (Collaboration with Dr. George L. Drusano and Dr. Ashley N. Brown, UF-COM, Orlando, FL)
- Developing novel UPLC-MS/MS assays to characterize the intracellular penetration and accumulation of anti-cancer agents (cytarabine) and the biosynthesis of its active neo-nucleotide triphosphate metabolites (collaboration with Dr. Jatinder Lamba, UF-COP, Gainesville)
- Developing novel UPLC-MS/MS assays to characterize the intracellular penetration and accumulation of aminoglycosides (gentamicin, amikacin, polymyxin, and tobramycin) and their PK in hollow fiber infection models and in immunocompetent infected mice (collaboration with Dr. Zackery Bulman, University of Illinois at Chicago, Chicago, IL).

04/2018 to 09/2018 **Postdoc –** College of Veterinary Medicine, Mississippi State University, Mississippi State, MS, United States. Supervisor: *Prof. Dr. Xiufeng Wan.*

- Building an efficient workflow for influenza viral glycoproteomics to provide mechanistic data for the interactions between influenza cell and host tropisms.

07/2016 to 02/2018 **Scientist II –**Shanghai Greenvalley PharmaceuticalCO. Ltd., Shanghai, China
R&D of the GV-971 for treatment Alzheimer’s disease (AD), phase III clinical study:

- Developing instrumental analysis methods (GC-MS, CE-MS, LC-MS) for QC and ADME study of an innovative anti-AD agent GV-971 (Phase III, NCT04520412).
- Establishing nano-LC-MS/MS based proteomics platform to discover clinical diagnostic biomarkers of AD.
- Exploring the ‘microbiota-gut-brain axis’ theory to elucidate novel pharmacological mechanisms of GV-971 for treating AD.

03/2013 to 09/2013 **Research Intern –** China Kangda Food Chemistry CO. Ltd., Qingdao, Shandong, China
Extraction & characterization of chondroitin sulfates and mucins from IRA rabbit byproducts.

Research interests

Infectious diseases, microbial proteomics, glycomics and metabolomics, Quantitative and Systems Pharmacology (**QSP**), Pharmacokinetics/Pharmacodynamics (**PK/PD**), Translational and Clinical Pharmacology

Researching skills

- **10 years** of experience in state-of-the-art mass-spectrometry based analyses, including LTQ Orbitrap XL, LTQ Orbitrap Fusion, LTQ Orbitrap Fusion / Q Extractive high-resolution mass spectrum (Thermo-Fisher Scientific), SCIEX Q-trap 6500+ (MRM) (AB SCIEX) and Q-TOF (Agilent Technology).
- Quantification of intracellular drug and metabolites concentrations (including 1st author publication)
- Outer membrane permeability and intracellular drug accumulation studies (incl. 1st author publication)
- Translational clinical pharmacology (including QSP and PK/PD mathematical modeling)
- Expertise quantification analysis of large biomolecules using bottom-up combination strategies of chemical and enzymatical degradation, derivatization, LC-MS, CE-MS, and GC-MS.
- Experitise in extraction, semi-preparative purification and in-depth characterization of unknown compounds using LC, HPLC, FTIR, NMR, and tandem MS technologies.

Softwares

- Structural characterization software packages: FTIR, MestReNova, DeconTools, GlycResoft, GlycoWorkbench, PMi-Byonic, Proteome Discoverer, Skyline-daily, Scaffold.
- Quantification analysis softwares: Thermo Fisher Scientific Xcalibur™, AB Sciex Analyst®, and Agilent MassHunter.
- Mastered in SPSS, Endnote, GraphPad Prism, XLSTAT and SIMCA.
- Trained in SADAPT-TRAN, Berkeley Madonna, Monolix, NONMEM, NLMIXR using RStudio, Matlab/ Simbiology (teaching assistant for course **PHA6133**, “Translational Clinical Pharmacology”)
- Certificated by National Computer Rank Examination (NCRE): Visual C++ (Rank II) Certificate and Internet technology (Rank III) Certificate.

Honors and awards

- 10/2015 Excellent Post-graduate Direct Scholarship, Ocean University of China
- 09/2014 University Scholarship, First prize, Ocean University of China
- 09/2012 University Scholarship, First prize, Ocean University of China
- 10/2010 University Scholarship, Second prize, Yantai University
- 10/2009 University Scholarship, First prize, Yantai University
- 10/2008 University Scholarship, First prize, Yantai University

Professional affiliations

American Society for Microbiology (ASM); International Society for Pharmacometrics (IsoP)

ONGOING PROJECTS (awarded)

1. Tsuji BT (PD/PI), Bulitta JB (PD/PI), Louie A (Co-I), Moya B (Co-I, Drusano GL (Co-I), Chen L (Co-I), Kreiswirth BN (Co-I), Bulman ZP (Co-I)
Novel Strategies for Antibiotic Combinations to Combat Gram-negative Superbugs
National Institutes of Health, **NIH / NIAID**, 1R01AI148560
12/20/2019 – 11/30/2024, $3,920k
Role: Postdoc named on grant application.

2. Bulitta JB (PI), Lee RE (Co-I), Schweizer HP (Co-I), Louie A (Co-I), Moya B (Co-I), Drusano GL (Co-I), Basso KB (Co-I), Copik A (Co-I), Bonomo R (Co-I), Balasubramanian V (Co-I)
Combating resistant superbugs by understanding the molecular determinants of target site penetration and binding
National Institutes of Health, **NIH / NIAID**, 1R01 AI136803
8/10/2018 – 7/31/2023, $5,728k
Role: Postdoc

3. Bulitta JB (PI), Louie A (Co-I), Boyce JD (Co-I), Bonomo R (Co-I), Drusano GL (Co-I)
Next-generation combination dosing strategies to combat resistant *Acinetobacter baumannii*
National Institutes of Health, **NIH / NIAID**, 1R01AI130185
11/08/2017 – 10/31/2022, $3,409k
Role: Postdoc

4. Luna BM (PI), Spellberg B, Bulitta JB (Sub-award PI), Louie A, Drusano GL, and Robert Bonomo
A Preclinical Mouse Model of *Acinetobacter baumannii* Infection For Antibacterial Development
Food and Drug Administration, FDABAA-17-00123, HHSF223201710199C
9/25/2017 – 8/31/2021, $2,222k (UF-subaward: $996k)
Role: Postdoc

COMPLETED PROJECT(s)

5. Bulitta JB, Jiao Y, **Lang Y**, Zhou J.
Developing innovative therapeutic strategies to combating Sars-CoV-2
UF-CTSI seed funding grant
4/1/2020 – 12/31/2020, $50k
Role: Postdoc named on grant

GRANT APPLICATIONS – UNDER REVIEW

Bulman ZP (PD/PI), Mankin A (Co-I), **Bulitta JB** (Co-I), Jiao Y (Co-I), Li J (Co-I), Hauser AR (Co-I), Ozer EA
Targeting Carbapenem-Resistant *Klebsiella pneumoniae* with Molecularly Precise Combination Strategies
National Institutes of Health, NIH / NIAID
4/1/2021 – 3/31/2026, $3,772,557
Role: Postdoc named on grant application.

PubMed Bibliography

https://www.ncbi.nlm.nih.gov/myncbi/1tsW5pHvXgA5I/bibliography/public/?sortby=pubDate&sdirection=descending

Google Scholar Citations: https://scholar.google.com/citations?user=Ai5_bQkAAAAJ&hl=en

Peer-reviewed Papers

1. **Lang Y***, Shah NR* (*joint first authors), Tao X, Reeve SM, Zhou J, Moya B, Sayed ARM, Dharuman S, Oyer JL, Copik AJ, Fleischer BA, Shin E, Werkman C, Basso KB, Deveson Lucas D, Sutaria DS, Mégroz M, Kim TH, Loudon-Hossler V, Wright A, Jimenez-Nieves RH, Wallace MJ, Cadet KC, Jiao Y, Boyce JD, LoVullo ED, Schweizer HP, Bonomo RA, Bharatham N, Tsuji BT, Landersdorfer CB, Norris MH, Soo Shin B, Louie A, Balasubramanian V, Lee RE, Drusano GL, Bulitta JB. Combating multidrug-resistant bacteria by integrating a novel target site penetration and receptor binding assay platform into translational modeling. Clin Pharmacol Ther. 2021 Feb 11. PMID: 33576025 IF_{2020}: **6.875**, Cites: *none yet*
2. **Lang Y**, Zhang Y, Wang C, Huang L, Liu X, Song N, Li G, Yu G. Comparison of different labeling techniques for the LC-MS profiling of human milk oligosaccharides. Front Chem. 2021 Aug 16. (accepted) IF_{2020}: **5.221**, Cites: *none yet*
3. Sayed ARM, Shah NR, Basso K, Kamat M, Jiao Y, Moya B, Sutaria DS, **Lang Y**, Tao X, Liu W, Shin E, Zhou J, Werkman C, Louie A, Drusano GL, Bulitta JB**.** First penicillin-binding protein occupancy patterns for 15 β-lactams and β-lactamase inhibitors in *Mycobacterium abscessus.* Antimicrob Agents Chemother 2020. PMID: 33106266 IF_{2020}: **4.45**, Cites: **4**
4. Kim TH, Tao X, Moya B, Jiao Y, Green KB, Zhou J, **Lang Y**, Sutaria DS, Zavascki AP, Barth AL, Reeve SM, Schweizer HP, Deveson Lucas D, Boyce JD, Bonomo RA, Lee RE, Shin BS, Louie A, Drusano GL, Bulitta JB. Novel cassette assay to quantify the outer membrane permeability of five β-lactams simultaneously in carbapenem-resistant *Klebsiella pneumoniae* and *Enterobacter cloacae*. **mBio**. 2020; 11. pii: e03189-19. PMID: 32047131 IF_{2020}: **6.87**, Cites: **5**
5. Huang Y, Sokolowski K, Rana A, Singh N, Wang J, Chen K, **Lang Y**, Zhou J, Kadiyala N, Krapp F, Ozer EA, Hauser AR, Li J, Bulitta JB, Bulman ZP. Generating Genotype-Specific Aminoglycoside Combinations with Ceftazidime/Avibactam for KPC-Producing Klebsiella pneumoniae. Antimicrob Agents Chemother. 2021 Jun 21:AAC0069221. PMID: 34152820 IF_{2020}: **4.45**, Cites: **none yet**
6. **Lang Y**, Zhao X, Liu L, Yu G. Applications of mass spectrometry to structural analysis of marine oligosaccharides. Marine Drugs. 2014, 12:4005-4030. PMID: 24983643 IF_{2019}: **5.118**, Cites: **27**
7. **Lang Y**, Liu S, Wang C, Zhang X, Lv Y, Cai C, Li G, Yu G. Separation and structural sequence analysis of sialylated HMOs via tandem mass spectrometry. Chemical Journal of Chinese Universities. 2018, 39:645-652. IF_{2019}: **1.063**, Cites: **1**
8. **Lang Y**, Wang C, Chen C, Zhang X, Liu X, Shan X, Cai C, Yu G. Isolation, Purification and Disaccharide Composition Analysis of Chondroitin Sulfate C from IRA Rabbit Lung. Chinese Journal of New Drugs. 2016, 10:1165-1169.
9. Wang C, **Lang Y**, Li Q, Jin X, Li G, Yu G. Glycosaminoglycanomic profiling of human milk in different stages of lactation by liquid chromatography-tandem mass spectrometry. Food Chemistry, 2018, 258:231-236. PMID: 29655727 IF_{2019}: **6.306**, Cites: **8**
10. Liu S, **Lang Y**, Zhu H, Yan L, Lv Y, Zhao X, Cai C, Yu G. Isolation and structural characterization of neutral human milk oligosaccharides. Chemical Journal of Chinese Universities. 2015, 6:1087-1093. IF_{2019}: **1.063**, Cites: **2**
11. Zhang X, Zhao X, **Lang Y**, Li Q, Liu X, Cai C, Hao J, Li G, Yu G. Low anticoagulant heparin oligosaccharides inhibit β-secretase: potential therapeutics for Alzheimer's disease. Carbohydrate Polymers. 2016, 151:51-59. PMID: 27474542 IF_{2019}: **7.182**, Cites:**14**
12. Zhang X, Fang F, Zhao X, **Lang Y**, Liu X, Cai C, Li G, Yu G. Isolation, purification and structural identification of glycosaminoglycans from porcine lung. Chinese Journal of Pharmaceutical Analysis. 2016, 4:587-593.

13. Liu X, Liu Y, Hao J, Zhao X, **Lang Y**, Fan F, Cai C, Li G, Zhang L, Yu G. In Vivo Anti-Cancer Mechanism of Low-Molecular-Weight Fucosylated Chondroitin Sulfate (LFCS) from Sea Cucumber Cucumaria frondosa. Molecules. 2016, 21:625. PMID: 27187337 IF_{2019}: **3.267**, Cites: **40**
14. Lv Y, Shan X, Zhao X, Cai C, Zhao X, **Lang Y**, Zhu H, Yu G. Extraction, isolation, structural characterization and anti-tumor properties of an apigalacturonan-rich polysaccharide from the sea grass zostera caespitosa miki. Marine Drugs. 2015, 13:3710-3731. PMID: 26110894 IF_{2019}: **4.073**, Cites: **14**
15. Wang P, Zhao X, Lv Y, Liu Y, **Lang Y**, Wu J, Liu X, Li M, Yu G. Analysis of structural heterogeneity of fucoidan from hizikia fusiforme by ES-CID-MS/MS. Carbohydrate Polymers. 2012, 90:602-607. PMID: 24751082 IF_{2019}: **7.182**, Cites: **50**
16. Zhu H, Zhang Y, Chen X, **Lang Y**, Lv Y, Zhang X, Cong D, Yu G. Isolation, purification and fine structure comparison analysis of glycosaminoglycans from three fish gills. Chinese Journal of Marine Drugs. 2014, 5:1-8.
17. Han X, Zhang Y, Liu L, **Lang Y**, Yu G. Isolation, purification and physiochemical characteristics comparison study of polysaccharides between wild and low salinity cultured green seaweeds *Chaetomorphalinum*. Chinese Journal of Marine Drugs. 2014, 5: 31-36.
18. Li L, Zhang Y, Han X, Shan X, Hou Y, **Lang Y**, Zhu H, Yu G. Modification of reduction method about uronic acids in acidic polysaccharides. Chinese Journal of Marine Drugs. 2014, 4:1-7.

Publications (submitted)

1. Jiao Y, Bulitta JB[#], Kinzig M, Landersdorfer CB, Tao X, **Lang Y**, Zhou J, Moya B, Höhl R, Holzgrabe U, Stephan U, Sörgel F[#] ([#]: joint corresponding authors). Comparable Renal Secretion and Reabsorption of Ciprofloxacin in Patients with Cystic Fibrosis and Healthy Volunteers assessed via Population Pharmacokinetics. Submitted.

Patent

1. Yu G, Zhang Y, Zhu H, **Lang Y**, Zhao X. Method for preparing high-purity chondroitin sulfate A from rabbit ear cartilage. Chinese Patent. CN103788231A.

Conference Presentations

1. **Lang Y**, Zhou J, Smith NM, Tao X, Sayed AR, Shin E, Carolin W, Cha R, Tsuji BT, Bulitta JB. Outer membrane permeability of six β-lactams in New Delhi Metallo-β-lactamase and CTX-M-Co-producing Klebsiella pneumoniae (KP). ESCMID 2021, Online; July 9-12, 2021.
2. **Lang Y**, Tao X, Zhou J, Jiao Y, Sutaria DS, Shin E, Shah N, Sayed AR, Moya B, Bulitta JB. Outer membrane permeability of carbapenems in *Pseudomonas aeruginosa* and *Acinetobacter baumannii*. Gordon Research Conference 2020, Italy; March 1-6, 2020.
3. **Lang Y**, Tao X, Zhou J, Shah N, Sutaria DS, Sayed AR, Moya B, Jiao Y, Louie A, Drusano G, Schweizer H, Bonomo R, Bulitta JB. Charactering outer membrane permeability for β-lactam antibiotics in *Acinetobacter baumannii* strain HUMC1. ESCMID 2020, Paris; April 18-21, 2020.
4. **Lang Y**, Tao X, Zhou J, Jiao Y, Sutaria DS, Shin E, Shah N, Sayed AR, Moya B, Bulitta JB. Outer membrane permeability of five carbapenems in *verona intergraon-encoded metallo-beta-lactamase* producing *Pseudomonas aeruginosa*. ASM 2020, Chicago; June 18-22, 2020.

5. Tao X, Shah NR, **Lang Y**, Zhou J, Sutaria DS, Rory A, Moya B, Jiao Y, Shin E, Louie A, Drusano GL, Schweizer HP, Bonomo RA, Lee RE, Bulitta JB. Characterizing Outer Membrane Permeability and Morphological Changes for Beta-lactam Antibiotics against *Acinetobacter baumannii*. ESCMID 2019, Boston; September 3-6, 2019.
6. Sutaria DS, Shah NR, Ropy A, Moya B, Jiao Y, Tao X, Zhou J, **Lang Y**, Shin E, Louie A, Drusano GL, Bulitta JB[#]. Comprehensive Penicillin-Binding Protein Occupancy Patterns of 29 Drugs in *Klebsiella pneumoniae.* ESCMID 2019; Boston, September 3-6, 2019.
7. Tao X, Zhou J, **Lang Y**, Kim TH, Moya B, Jiao Y, Sutaria DS, Shah NR, Schweizer HP, Boyce JD, Bonomo RA, Lee RE, Drusano GL, Louie A, Bulitta JB. Novel outer membrane permeability assay which can account for a time-dependent release of β-lactamase enzymes by *Acinetobacter baumannii* for 12 β-lactams. ASM Microbe 2019, San Francisco, June 20-24, 2019.
8. Smith NM, Chua HC, Bulman ZP, Boissonneault KR, Cha R, Tao X, Zhou J, **Lang Y**, Holden PN, Moya B, Bulitta JB, Tsuji BT. New Combinations against NDM-Producing *Klebsiella pneumoniae*: A Modeling Approach for Pharmacodynamic Optimization. ASM Microbe 2019, San Francisco, June 20-24, 2019.
9. Smith NM, Chua HC, Bulman ZP, Boissonneault KR, Cha R, Tao X, Zhou J, **Lang Y**, Holden PN, Moya B, Bulitta JB, Tsuji BT. Two Steps Forward, One Step Back: Combining the Latest Generation of Antimicrobials with Older Agents to Combat the Next Wave of Antibiotic Resistance. ASM Microbe 2019, San Francisco, June 20-24, 2019.
10. Moya B, Sutaria DS, Tao X, Boyce JD, Deveson Lucas D, Zhou J, **Lang Y**, Jiao Y, Shah NR, Kim TH, Schweizer HP, Bonomo RA, Lee RE, Louie A, Drusano GL, Bulitta JB. First whole-cell assay to study the time-course of beta-lactams binding to penicillin binding proteins in Acinetobacter baumannii. 29th European Congress of Clinical Microbiology and Infectious Diseases (ECCMID), Amsterdam, Netherlands; April 13-16, 2019.
11. Tao X, Zhou JQ, **Lang YZ**, Moya B, Jiao YY, Sutaria DS, Shah NR, Kim TH, Schweizer H, Bonomo RA, Lee RE, Louie A, Drusano G, Bulitta JB. Outer membrane permeability of 15 beta-lactams in multidrug-resistant Acinetobacter baumannii characterized via LC-MS/MS. 29th European Congress of Clinical Microbiology and Infectious Diseases (ECCMID), Amsterdam, Netherlands; April 13-16, 2019.
12. Qian Y, Tao X, Kim TH, Zhou J, **Lang Y**, Moya B, Sutaria DS, Jiao Y, Shah NR, Bulitta JB. Comprehensive thermal stability data and optimal supplement dosing schemes for in vitro time-kill experiments with 10 beta-lactams and 3 beta-lactamase inhibitor in Mueller-Hinton broth. 29th European Congress of Clinical Microbiology and Infectious Diseases (ECCMID), Amsterdam, Netherlands; April 13-16, 2019.
19. Wen F, Li L, Liu L, **Lang Y**, Li L, Wang P, Wan XF. Glycan substructures specific for influenza cell and host tropisms. American Chemical Society, Orlando, March 31 – April 4, 2019.
20. Wen F, Li L, Liu L, Li L, Wang P, **Lang Y**, Wan XF. Decoding glycan substructures specific for influenza cell and host tropisms using systems biology approaches. OPTION X for the Control of Influenza, Singapore; August 28 – September 1, 2019.
21. Lang Y, Wang C, Guoyun Li, et al. The development of an annotated library of human milk oligosaccharides from six different reducing-terminal derivatizations. The 16th Beijing Conference and Exhibition on Instrumental Analysis (BCEIA), Beijing, China; October 26-26, 2015.

Yinzhi Lang, Ph.D.

Research Assistant Professor
Email: y.lang@cop.ufl.edu, Phone: +1 626 238 9567

Education:

2011: B.Sc. in Pharmacy, Yantai University, China
2016: Ph.D. in Medicinal Chemistry, Ocean University of China, China

Positions:

2016 to 2018: Scientist II, Shanghai Green Valley Pharmaceutical CO.
2018 to 2018: Postdoc, College of Vet. Medicine, Mississippi State Univ.
2018 to 2021: Postdoc, College of Pharmacy, Univ. of Florida
Since 2021: Research Assistant Professor, College of Pharmacy, Univ. of Florida

Research: Dr. Yinzhi Lang joined the UF COP in 2018 and have received systematic academic training on antimicrobial pharmacology, pharmacokinetics and pharmacodynamics. Dr. Lang created a series of UPLC-MRM-MS/MS assays to quantify the penetration of multiple antibiotic classes and employed LC-MS/MS based proteomics, metabolomics and lipidomics to characterize bacterial biomolecules (porins, efflux pumps, receptors, energy metabolites, lipids). She is significantly contributing to developing Quantitative and Systems Pharmacology (QSP) models with Dr. Bulitta to integrate these mechanistic data with bacterial killing, resistance, tolerance and persistence.

Dr. Lang's most valuable contribution to the anti-infective research is the series of intracellular penetration assays for multiple antibiotic and anti-viral classes which she developed and/or greatly enhanced. These use different assay approaches to study outer membrane permeability of Gram-negative bacteria as well as direct quantification of intracellular antibiotic or antiviral concentrations (including those of active triphosphate metabolites). Dr. Lang fully leverages our latest generation LC-MS/MS (Sciex 6500+) at UF in Lake Nona. This allows us to move the field forward via translational collaborative research.

Dr. Lang's doctoral research focused on developing advanced biochemical and bioanalytical methods for extracting and analyzing complex carbohydrate from animals and humans. In her doctoral dissertation, she developed novel combination strategies of carbohydrate derivatization and LC-MS/MS for rapid and reliable compositional profiling of human milk free oligosaccharides (HMOs, ~200 diverse structures). She further developed an integrated design for compositional profiling of the total carbohydrate moiety of human milk, including HMOs, N-/O-linked glycoproteins and glycolipids, and explored the expression dynamics of glycans components associated with different lactation stages, to support future research on optimizing infant formula design. When working as a Senior Scientist at Shanghai Greenvalley Pharmaceutical Co. Ltd., Dr. Lang played an integral role in developing instrumental analysis methods (GC-MS, CE-MS, LC-MS) for QC and ADME studies of an innovative anti-Alzheimer agent GV-971 (Phase III, NCT04520412).

Publications from PhD *(as of 8/23/2021)*	**Published**
Peer-reviewed research papers	18
All papers	21
Patents	1
International conference abstracts	21

PubMed Bibliography:
https://www.ncbi.nlm.nih.gov/myncbi/browse/collection/53863167/?sort=date&direction=descending

Google Scholar Citations:
https://scholar.google.com/citations?user=Ai5_bQkAAAAJ&hl=en