

Dan Wang, PhD
Curriculum Vitae

Beaumont Hospital, Royal Oak
Department of Clinical Pathology
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EMPLOYMENT

Technical Director, Automated Chemistry Beaumont Hospital, Royal Oak	2019-Present
Clinical Chemistry Fellow Department of Pathology and Laboratory Medicine Medical University of South Carolina, Charleston, SC	2017-2019
Clinical Trial Coordinator Department of Pathology and Laboratory Medicine Medical University of South Carolina, Charleston, SC	2018-2019
Senior Research Associate Clinical Chemistry Laboratory Mount Sinai Medical Center, New York, NY	2016-2017
Mass Spectrometry Facility Assistant Cleveland State University, Cleveland, OH	2013-2014

EDUCATION

Ph.D., Clinical-Bioanalytical Chemistry (CBC) Department of Chemistry Cleveland State University, Cleveland, OH	2013-2016
M.S., Chemistry Department of Chemistry Cleveland State University, Cleveland, OH	2012-2013
M.S., Pharmaceutical Analysis Department of Pharmacy Shenyang Pharmaceutical University, Shenyang, China	2009-2011
B.S., Pharmacy Department of Pharmacy Shenyang Pharmaceutical University, Shenyang, China	2005-2009

BOARD CERTIFICATION AND LICENSURE

American Board of Clinical Chemistry – Diplomate

American Board of Toxicological Chemistry – Board Eligible

WORKING EXPERIENCE

Clinical Chemistry Fellow

2017-2019

Department of Pathology and Laboratory Medicine, Medical University of South Carolina, Charleston, SC

- Clinical rotations
 - Trained in lab management, automated chemistry, toxicology, special chemistry, point of care testing, electrophoresis, molecular diagnostics, biochemical genetics, bioinformatics, immunology, hematology, and microbiology
- Quality assurance and quality improvement responsibilities
 - Reviewed monthly QC performance for more than 100 tests
 - Reviewed CAP proficiency tests
 - Participated in weekly QC meeting to discuss assay performance and improvement
 - Attended monthly clinical chemistry division meeting and clinical lab advisory committee meeting to discuss test utilization and quality improvement
- Clinical and technical consultation
 - Consulted with clinicians regarding tests selection and results interpretation
 - Served as technical resource for lab technologists
- Research and quality improvement projects
 - Formulated and validated a novel equation to correct potassium result in hemolyzed specimen
 - Validated procalcitonin and vitamin D tests on Abbott Architect analyzer
 - Evaluated NexScreen urine cup for point of care drug screening
 - Studied drug interference to Jaffe-based creatinine assays
 - Investigated the effect of sample handling on free valproic acid levels
- New assay development and validation
 - Develop a clinical LC-MS/MS method for thyroglobulin quantification (ongoing project)
 - Developed and validated a clinical LC-MS/MS method for methylmalonic acid quantification

Senior Research Associate

2016-2017

Clinical Chemistry Lab, Mount Sinai Medical Center, New York, NY

- New assay development and validation

- Developed a proteomics clinical assay for amyloid tissue sub-typing
- Developed and validated a clinical LC-MS/MS method for buprenorphine and norbuprenorphine quantification in urine • Research and quality improvement projects
- Interference study
 - Performed extensive hemolysis, icterus and lipemia interference study on routine clinical chemistry assays
 - Determined assay specific interference cutoffs for each interferent
- Quality improvement project
 - Conducted a root cause analysis of apparently high incidence of false low positive HIV 4th generation screen test results

Research Assistant

2009-2016

Ph.D. Candidate

Department of Chemistry, Cleveland State University, Cleveland, OH

- Established systematic approach to study roles of sialic acid in immune cell signaling
 - Developed two LC-MS/MS methods and one LC-fluorescence method for free sialic acid quantification
 - Combined LC-MS/MS, flow cytometry, and confocal microscopy to study the effect of drugs on sialic acid linkages and distribution in immune cells
- Studied sialic acid function in macrophages
 - Studied sialylation and desialylation dynamics of monocytes upon differentiation and polarization to macrophages
 - Synthesized and screened sialic acid analogues for macrophages reprogramming
 - Collaborated with Dr. Peng George Wang from Georgia State University to study enzymatic and chemical desialylation of macrophages

M.S. Candidate

Department of Chemistry, Cleveland State University, Cleveland, OH

- Simultaneous determination of Bisphenol A and its metabolite in human plasma and urine by LC-MS/MS

M.S. Candidate

Department of Pharmacy, Shenyang Pharmaceutical University, Shenyang, China

- Developed and validated quantitative LC-MS/MS methods for pharmacokinetic studies of Nifedipine, Palonosetron, Aniracetam, Lisinopril and Isosorbide 5-Mononitrate
- Investigated drug interaction between Glibenclamide and Puerarin in diabetic mice

MASS SPECTROMETRY INSTRUMENTATION EXPERIENCE

LC-MS/MS (Triple Quadrupole)

- Waters triple quadrupole: Micromass Quattro Micro, Xevo TQ-XS
- SCIEX Qtrap5500
- Thermo Scientific triple quadrupole: TSQ Endura, TSQ Quantiva

Orbitrap

- Thermo Scientific Q Exactive Hybrid Quadrupole-Orbitrap

MALDI-TOF

- Bruker AutoFlex III MALDI-TOF-TOF

TEACHING EXPERIENCE

Teaching Assistant (undergraduate level) 2013-2015

Department of Chemistry, Cleveland State University, Cleveland, OH

- Lectured and instructed general chemistry laboratory sessions
- Tutored biochemistry and general chemistry
- Prepared chemistry quizzes and exams

Clinical Chemistry Fellow 2017-2019

Medical University of South Carolina, Charleston, SC

- Lectured chemistry sections to pathology residents
- Taught medical students test principles and instrumentations used in chemistry laboratories
- Presented tests related clinical cases to pathology residents and lab technologists

HONORS AND AWARDS

Siemens Healthineers Medical and Scientific Learning Exchange Program 2018
Siemens Healthineers, Newark, DE

SYCL Travel Grant 2018
70th AACC Annual Scientific Meeting & Clinical Lab Expo, Chicago, IL

MSACL Trainee Travel Grant 2017
Mass Spectrometry: Applications to the Clinical Lab (MSACL) annual conference & exhibits, Palm Springs, CA

Cellular and Molecular Medicine Specialization Fellowship 2015-2016
Cleveland State University, Cleveland, OH

Best Oral Presentation Award 2015
11th Annual Midwest Carbohydrate and Glycobiology Symposium, Cleveland, OH

Doctoral Dissertation Research Award (\$5000) Cleveland State University, Cleveland, OH	2015
MSACL Young Investigator Travel Grant Mass Spectrometry: Application to the Clinical Lab (MSACL) annual conference & exhibits, San Diego, CA	2015
Ohio Collaborative Laboratory Conference Travel Award Northeast Ohio section of American Association for Clinical Chemistry	2014
MSACL Young Investigator Travel Grant Mass Spectrometry: Application to the Clinical Lab (MSACL) annual conference & exhibits, San Diego, CA	2014

PROFESSIONAL ORGANIZATIONS AND SERVICE

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| • American Association for Clinical Chemistry | 2014-present |
| • American Society for Mass Spectrometry | 2014-present |
| • Academy of Clinical Laboratory Physicians and Scientists | 2018-present |
| • Assistant, the 11th Annual Midwest Carbohydrate and Glycobiology Symposium (MCGS) | 2015 |

PUBLICATIONS (Peer Reviewed)

1. Dan Wang, Anthony J. Emanuel, Ron Neyens, Eugene Bakharev, Nikolina Babic. Cefoxitin-Serum Creatinine Interference in a Patient with Nontuberculous Mycobacteria Ventriculomeningitis: Is it Only an Issue of the Past? *Pharmacotherapy*, in submission.
2. Dan Wang, Brittany Caddell, Frederick S Nolte, Nikolina Babic. Comparison of the Abbott Architect BRAHMS and the Biomérieux Vidas BRAHMS Procalcitonin Assays. *JALM*, **2018**, DOI: 10.1373/jalm.2018.027268
3. Joshua Whited, Xiaoqing Zhang, Huan Nie, Dan Wang, Yu Li, and Xue-Long Sun. Recent chemical biology approaches for profiling cell surface sialylation status. *ACS Chem. Biol.*, **2018**, 13:2364-2374.
4. Xiaoqing Zhang, Huan Nie, Joshua Whited, Dan Wang, Yu Li and Xue-Long Sun. Recent bio-affinity approaches for directly profiling cell surface sialoform. *Glycobiology*. **2018**, 28:910-924.
5. Jinshan Tang, Evgeny Ozhegov, Yang Liu, Dan Wang, Xinsheng Yao, Xue-Long Sun. Straightforward synthesis of *N*-glycan polymers from free glycans via cyanoxyl free radical-mediated polymerization. *ACS Macro Letters*, **2017**, 6:107-111.
6. Dan Wang , Evgeny Ozhegov, Lin Wang, Aimin Zhou, Huan Nie, Yu Li, Xue-Long Sun. Sialylation and desialylation dynamics of monocytes upon differentiation and polarization to macrophages. *Glycoconjugate Journal*, **2016**, Apr 14.

7. Dan Wang, Huan Nie, Evgeny Ozhegov, Lin Wang, Aimin Zhou, Yu Li, Xue-Long Sun. Globally profiling sialylation status of macrophages upon statin treatment. *Glycobiology*, **2015**, 25(9):1007-1015.
8. Libo Wang, Dan Wang, Xiang Zhou, Lijun Wu, and Xue-long Sun. Systemic investigation of quinoxaline derivatization of sialic acids and their quantitation applicability using high performance liquid chromatography. *RSC Advances*, **2014**, 4, 45797-45803.
9. Dan Wang, Xiang Zhou, Lin Wang, Sihe Wang, Xue-Long Sun. Quantification of free sialic acid in human plasma through a robust quinoxalinone derivatization and LC-MS/MS using isotope-labeled standard calibration. *Journal of Chromatography B*, **2014**, 944: 75-81.
10. Ning Li, Ying Deng, Dan Wang, Ying Qiao, Famei Li. Determination of glibenclamide and puerarin in rat plasma by UPLC-MS/MS: application to their pharmacokinetic interaction study. *Talanta*. **2013**, 104:109-115.
11. Feng Qin, Dan Wang, Shuyan Yang, Lijuan Jing, Zhili Xiong, Famei Li. Quantitative determination of lisinopril in human plasma by high performance liquid chromatography-tandem mass spectrometry and its application in a pharmacokinetic study. *Biomedical Chromatograph*, **2012**, 26 (6): 691-696.
12. Shuyan Yang, Feng Qin, Dan Wang, Ning Li, Famei Li, Zhili Xiong. Determination of palonosetron in human plasma by ultra performance liquid chromatography tandem mass spectrometry and its application to a pharmacokinetic study. *Journal of Pharmaceutical and Biomedical Analysis*, **2012**, 57: 13-18.
13. Xiumei Lu, Dan Wang, Shuyan Yang, Feng Qin, Famei Li. Determination of isosorbide 5-mononitrate in human plasma by LC-MS/MS and Its pharmacokinetics. *Chinese Journal of Pharmaceuticals*, **2012**, 6: 459-463.
14. Dan Wang, Kun Jiang, Shuyan Yang, Feng Qin, Xiumei Lu, Famei Li. Determination of nifedipine in human plasma by ultra performance liquid chromatography-tandem mass spectrometry and its application in a pharmacokinetic study. *Journal of Chromatography B*, **2011**, 879 (20): 1827-1832.

PRESENTATIONS AT PROFESSIONAL CONFERENCES

- Dan Wang, Elizabeth Champion-Lyons, Nicole Bohm, Ron Neyens, Nikolina Babic. The effect of sample handling on free valproic acid levels: Is it better to measure or estimate free drug levels? *Poster presentation*, 71st AACC Annual Scientific Meeting & Clinical Lab Expo, Anaheim, August 4-8, 2019.
- Dan Wang, Brittany Caddell, Peter Gardella, Greg A. Hall, Nikolina Babic. An equation for correction of potassium in hemolyzed specimens. *Poster presentation*, 70th AACC Annual Scientific Meeting & Clinical Lab Expo, Chicago, July 29 - August 2, 2018.

- Dan Wang, Brittaney Dieppa, Shea Woodward, Nikolina Babic. Evaluation of NexScreen cup point-of-care immunoassays for urine drug screening in chronic pain management patients. *Poster presentation*, the 53rd annual meeting of the Academy of Clinical Laboratory Physicians and Scientists (ACLPS), Houston, May 3 - June 2, 2018.
- Dan Wang, Evgeny Ozhegov, Lin Wang, Aimin Zhou, Xue-Long Sun. Sialylation dynamics of monocytes upon differentiation and polarization to macrophages. *Oral presentation*, the 11th Annual Midwest Carbohydrate and Glycobiology Symposium (MCGS), Cleveland, October 23 - 24, 2015.
- Dan Wang, Evgeny Ozhegov, Aimin Zhou, Xue-Long Sun. Profiling sialylation status during monocytes differentiation into macrophages. *Poster presentation*, 2015 AACC Annual meeting & Clinical Lab Expo, Atlanta, July 26 - 30, 2015.
- Dan Wang, Huan Nie, Evgeny Ozhegov, Aimin Zhou, Xue-Long Sun. Profiling sialylation status of macrophage upon cell activation. *Poster presentation*, 7th MSACL Annual Conference & Exhibits, San Diego, March 28 - April 1, 2015.
- Dan Wang, Huan Nie, Evgeny Ozhegov, Aimin Zhou, Xue-Long Sun. Globally profiling sialylation status of macrophage upon activation. *Oral presentation*, the 10th Annual Midwest Carbohydrate and Glycobiology Symposium (MCGS), Ann Arbor, October 17 -18, 2014.
- Dan Wang, Huan Nie, Evgeny Ozhegov, Aimin Zhou, Xue-Long Sun. Quantitative measurement of sialic acid in culture medium and cell surface. *Poster presentation*, 62nd ASMS Conference, Baltimore, June 15 -19, 2014.
- Dan Wang, Xiang Zhou, Xue-Long Sun. Free and total sialic acid study in human plasma with LC-MS/MS. *Poster presentation*, 6th MSACL Annual Conference & Exhibits, San Diego, March 1 - 5, 2014.
- Dan Wang, Xiang Zhou, Libo Wang, Lin Wang, Xue-Long Sun. Quantification of free sialic acid in human plasma based on a robust quinoxalinone derivatization and LC-MS/MS. *Oral presentation*, the 9th Annual Midwest Carbohydrate and Glycobiology Symposium (MCGS), Toledo, September, 20, 2013.
- Dan Wang, Shuming Yang, Yan Xu. Simultaneous Determination of bisphenol A and its metabolite in human plasma by LC-MS/MS. *Poster presentation*, the 6th Annual Cleveland State Interdisciplinary Research Conference, Cleveland, November, 3, 2012.