

Stanford



Ruben Y. Luo

Assistant Professor of Pathology

Bio

BIO

Ruben Yiqi Luo, PhD, DABCC is an assistant professor of pathology at Stanford University and associate director of clinical chemistry laboratory at Stanford Health Care. He is dedicated to the innovation of clinical diagnostic technologies, and has pioneered the application of label-free immunoassays and top-down mass spectrometry in clinical chemistry. He completed his clinical chemistry fellowship at University of California San Francisco. Before the fellowship, he worked in the clinical diagnostic industry holding multiple managerial positions. He received his PhD in chemistry from Stanford University, and BS from Peking University.

ACADEMIC APPOINTMENTS

- Assistant Professor - University Medical Line, Pathology

ADMINISTRATIVE APPOINTMENTS

- Associate Director, Clinical Chemistry Laboratory, Stanford Health Care, (2021- present)

HONORS AND AWARDS

- AACC George Grannis Award for Excellence in Research and Scientific Publication, American Association for Clinical Chemistry (2022)
- NACCCA Outstanding Research Award, North American Chinese Clinical Chemists Association (2021)
- ASCP “40 Under Forty” Honoree, American Society for Clinical Pathology (2020)
- AACC Academy’s Distinguished Abstract Award, American Association for Clinical Chemistry (2020)
- AACC Best Abstract Award for Outstanding Research in TDM, American Association for Clinical Chemistry (2020)
- AACC Best Abstract Award for Outstanding Research in TDM, American Association for Clinical Chemistry (2019)

BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Member-at-Large, Mass Spectrometry and Separation Sciences Division, American Association for Clinical Chemistry (2021 - present)
- Member, American Society for Clinical Pathology (2020 - 2022)
- Board Member, North American Chinese Clinical Chemists Association (2019 - present)
- Member, American Society for Mass Spectrometry (2018 - present)
- Member, American Association for Clinical Chemistry (2017 - present)

PROFESSIONAL EDUCATION

- Board Certification, American Board of Clinical Chemistry (2020)
- Fellowship, UCSF Clinical Chemistry Fellowship Program (2020)
- PhD, Stanford University (2008)

- BS, Peking University (2003)

PATENTS

- R. N. Zare, Y. Luo, F. Yu. "United States Patent 8,289,519 Surface Plasmon Resonance (SPR) Microscopy Systems, Method of Fabrication Thereof, and Methods of Use Thereof", Stanford University, Oct 16, 2012

Publications

PUBLICATIONS

- **A SARS-CoV-2 Label-Free Surrogate Virus Neutralization Test and a Longitudinal Study of Antibody Characteristics in COVID-19 Patients.** *Journal of clinical microbiology*
Luo, Y. R., Yun, C., Chakraborty, I., Wu, A. H., Lynch, K. L.
2021; 59 (7): e0019321
- **Development of Label-Free Immunoassays as Novel Solutions for the Measurement of Monoclonal Antibody Drugs and Antidrug Antibodies** *CLINICAL CHEMISTRY*
Luo, Y., Chakraborty, I., Lazar-Molnar, E., Wu, A. B., Lynch, K. L.
2020; 66 (10): 1319-1328
- **Kinetics of SARS-CoV-2 Antibody Avidity Maturation and Association with Disease Severity.** *Clinical infectious diseases : an official publication of the Infectious Diseases Society of America*
Luo, Y. R., Chakraborty, I., Yun, C., Wu, A. H., Lynch, K. L.
2020
- **Correlation of Breath and Blood Delta(9)-Tetrahydrocannabinol Concentrations and Release Kinetics Following Controlled Administration of Smoked Cannabis** *CLINICAL CHEMISTRY*
Lynch, K. L., Luo, Y., Hooshfar, S., Yun, C.
2019; 65 (9): 1171-1179
- **Azo coupling-based derivatization method for high-sensitivity liquid chromatography-tandem mass spectrometry analysis of tetrahydrocannabinol and other aromatic compounds** *JOURNAL OF CHROMATOGRAPHY A*
Luo, Y., Han, J., Yun, C., Lynch, K. L.
2019; 1597: 109-118
- **Primary Hyperparathyroidism in Pregnancy: Insights From a Case of a 28-Year-Old Woman With Miscarriages and Hyperemesis Gravidarum** *ANNALS OF LABORATORY MEDICINE*
Zhang, L., Luo, Y., Hu, Y., Zhai, Y., Gao, H., Cao, Z.
2021; 41 (3): 336-338
- **Establishment of a High-Resolution Liquid Chromatography-Mass Spectrometry Spectral Library for Screening Toxic Natural Products.** *Journal of analytical toxicology*
Luo, Y. R., Goodnough, R., Yun, C., Wu, A. H., Lynch, K. L.
2021
- **Simultaneous quantitation of four androgens and 17-hydroxyprogesterone in polycystic ovarian syndrome patients by LC-MS/MS** *JOURNAL OF CLINICAL LABORATORY ANALYSIS*
Cao, Z., Lu, Y., Cong, Y., Liu, Y., Li, Y., Wang, H., Zhang, Q., Huang, W., Liu, J., Dong, Y., Tang, G., Luo, Y. R., Yin, et al
2020; 34 (12): e23539
- **A case of unexplained duodenal ulcer and massive gastrointestinal bleed** *CLINICA CHIMICA ACTA*
Luo, Y., Goodnough, R., Menza, R., Badea, A., Luu, H., Kornblith, L. Z., Lynch, K. L.
2020; 506: 188-190
- **A thin-film interferometry-based label-free immunoassay for the detection of daratumumab interference in serum protein electrophoresis** *CLINICA CHIMICA ACTA*
Luo, Y., Chakraborty, I., Zuk, R. F., Lynch, K. L., Wu, A. B.
2020; 502: 128-132
- **Label-Free Detection of Therapeutic Monoclonal Antibody Interference**
Luo, Y. R.

American Association for Clinical Chemistry.
2020 ; Clinical Laboratory News

- **Is High-Resolution Liquid Chromatography-Multistage Mass Spectrometry (LC-HR-MSn) a Good Choice for Screening Toxic Natural Products?**
Luo, Y. R.
American Association for Clinical Chemistry.
2020 ; AACC Academy's Scientific Shorts
- **Quantitation of Cannabinoids in Breath Samples Using a Novel Derivatization LC-MS/MS Assay with Ultra-High Sensitivity** *JOURNAL OF ANALYTICAL TOXICOLOGY*
Luo, Y., Yun, C., Lynch, K. L.
2019; 43 (5): 331-339
- **Drug Induced Liver Injury and Lactic Acidosis Associated with Chronic Sustained Release Nicotinamide Exposure** *American Journal of Biomedical Science & Research*
Goodnough, R., Monto, A., Luo, Y. R., Lynch, K. L., Blanc, P. D.
2019; 5 (2): 000894
- **Ligand Immobilization in Protein Interaction Studies – An Unattended Amine Coupling Protocol with Automatic Coinjection Activation**
Luo, R., Bronner, V., Zafir-Lavie, I., Thornton, K., Shezifi, D.
Bio-Rad Laboratories.
2014 ; Bioradiations
- **Novel Liposome-Capture Surface Chemistries to Analyze Drug-Lipid Interaction Using the ProteOn™ XPR36 System**
Edri, M., Luo, R., Rabkin, E., Nimri, S., Shezifi, D.
Bio-Rad Laboratories.
2014 ; Bioradiations
- **Analyzing Binding Kinetics with Surface Plasmon Resonance Complemented with Direct Mass Spectrometry on the Same Sensor Chip**
Luo, R., Zhu, M., Roth, S., Plows, F.
Bio-Rad Laboratories.
2013 ; Bioradiations
- **A Novel Biotinylated Ligand-Capture Method with Surface Regeneration Capability for Label-Free Biomolecular Interaction Analysis**
Zhu, M., Shezifi, D., Nimri, S., Luo, R.
Bio-Rad Laboratories.
2013 ; Bioradiations
- **Immobilization of Active Kinases for Small Molecule Inhibition Studies**
Poppellwell, J., Luo, R.
Bio-Rad Laboratories.
2013 ; Bioradiations
- **Microfluidic Device for Coupling Capillary Electrophoresis and Matrix-Assisted Laser Desorption Ionization-Mass Spectrometry** *JALA*
Luo, Y., Xu, S., Schilling, J. W., Lau, K. H., Whitin, J. C., Yu, T. T., Cohen, H. J.
2009; 14 (5): 252-261
- **Perforated membrane method for fabricating three-dimensional polydimethylsiloxane microfluidic devices** *LAB ON A CHIP*
Luo, Y., Zare, R. N.
2008; 8 (10): 1688-1694
- **Microfluidic device for immunoassays based on surface plasmon resonance imaging** *LAB ON A CHIP*
Luo, Y., Yu, F., Zare, R. N.
2008; 8 (5): 694-700
- **Controlling electroosmotic flow in poly(dimethylsiloxane) separation channels by means of prepolymer additives** *ANALYTICAL CHEMISTRY*
Luo, Y., Huang, B., Wu, H., Zare, R. N.
2006; 78 (13): 4588-4592

- **Optimized separation of isoquinoline alkaloids in *Thalictrum* herbal medicine by microemulsion electrokinetic chromatography** *JOURNAL OF LIQUID CHROMATOGRAPHY & RELATED TECHNOLOGIES*
Luo, Y. Q., Bo, T., Li, M., Gong, S. X., Li, K. A., Liu, H. W.
2003; 26 (11): 1719-1730
- **Separation of isoquinoline alkaloids and saponins by microemulsion electrokinetic chromatography with anionic and cationic surfactants** *CHROMATOGRAPHIA*
Bo, T., Zhong, L., Li, M., Luo, Y. Q., Li, K. A., Liu, H. W., Guo, D. A.
2002; 56 (11-12): 709-716

PRESENTATIONS

- Rapid Plate-Format Label-Free Immunoassays for Quantitation of Monoclonal Antibody Drugs and Detection of Anti-Drug Antibodies in Serum Samples - AACC Annual Scientific Meeting (August 6, 2019)
- Quantitation of Cannabinoids in Breath Samples Using a Novel Derivatization LC-MS Assay with Ultrahigh Sensitivity - ASMS Conference (June 6, 2019)
- A Novel Derivatization-Based LC-MS/MS Method with High Sensitivity for Quantitation of Cannabinoids in Breath Samples - AACC Annual Scientific Meeting (August 1, 2018)
- Simple and Rapid LC-MS/MS Methods for Quantitation of Five Cannabinoids in Breath and Blood Samples - MSACL Annual Conference (January 24, 2018)
- Developing Microfluidic Chips for Coupling Capillary Electrophoresis with Matrix-Assisted Laser Desorption Ionization-Mass Spectrometry - PITTCON Conference (March 3, 2008)
- Combining Microfluidics with Surface Plasmon Resonance Imaging for Rapid Label-Free Immunoassays - ACS National Meeting (August 22, 2007)