

Stanford



Xin Liu

Basic Life Science Research Scientist, Genetics

Bio

BIO

Xin Liu is a postdoctoral Research Scientist in the Department of Genetics at Stanford University. Xin holds a PhD in Chemistry from the University of Michigan, Ann Arbor. Her basic research interests include RNA and protein biochemistry, enzymology, cancer immunology, and autoimmune disease. She has published papers in several prestigious journals in the field of biochemistry, including *Nature Communications*, *Journal of American Chemical Society*, and *Nucleic Acids Research*. The highlight of her multidisciplinary research includes the development of high-throughput enzymatic methods to discover anti-microbial agents and to reveal mechanisms behind human mitochondrial diseases, as well as innovative applications of genome engineering and machine-learning to decode principles of RNA editing in human cells. Her current research focuses on the mechanistic study of innate immune pathways.

EDUCATION AND CERTIFICATIONS

- PhD, University of Michigan, Ann Arbor , Chemistry (2013)
- MS, Wuhan University , Analytical Chemistry (2007)
- BS, Wuhan University , Chemistry (2005)

Professional

WORK EXPERIENCE

- Postdoctoral Research Scientist - Stanford University School of Medicine, Genetics (9/1/2020 - present)
- Postdoctoral Research Fellow - Stanford University School of Medicine, Genetics (10/1/2016 - 8/31/2020)
- Postdoctoral Research Fellow - Stanford University, Chemistry (9/1/2015 - 9/30/2016)
- Postdoctoral Research Fellow - University of Michigan, Ann Arbor, Chemistry (8/17/2013 - 8/25/2015)

Publications

PUBLICATIONS

- **Learning cis-regulatory principles of ADAR-based RNA editing from CRISPR-mediated mutagenesis.** *Nature communications*
Liu, X., Sun, T., Shcherbina, A., Li, Q., Jarmoskaite, I., Kappel, K., Ramaswami, G., Das, R., Kundaje, A., Li, J. B.
2021; 12 (1): 2165
- **Updates to the RNA mapping database (RMDb), version 2** *NUCLEIC ACIDS RESEARCH*
Yesselman, J. D., Tian, S., Liu, X., Shi, L., Li, J., Das, R.
2018; 46 (D1): D375–D379
- **Fluorescence-Based Real-Time Activity Assays to Identify RNase P Inhibitors.** *Methods in molecular biology (Clifton, N.J.)*
Chen, Y., Liu, X., Wu, N., Fierke, C. A.

2017; 1520: 201-225

- **Inner-Sphere Coordination of Divalent Metal Ion with Nucleobase in Catalytic RNA.** *Journal of the American Chemical Society*
Liu, X. n., Chen, Y. n., Fierke, C. A.
2017; 139 (48): 17457–63
- **The Diversity of Ribonuclease P: Protein and RNA Catalysts with Analogous Biological Functions.** *Biomolecules*
Klemm, B. P., Wu, N., Chen, Y., Liu, X., Kaitany, K. J., Howard, M. J., Fierke, C. A.
2016; 6 (2)
- **Noncanonical Secondary Structure Stabilizes Mitochondrial tRNA(Ser(UCN)) by Reducing the Entropic Cost of Tertiary Folding** *JOURNAL OF THE AMERICAN CHEMICAL SOCIETY*
Mustoe, A. M., Liu, X., Lin, P. J., Al-Hashimi, H. M., Fierke, C. A., Brooks, C. L.
2015; 137 (10): 3592-3599
- **A real-time fluorescence polarization activity assay to screen for inhibitors of bacterial ribonuclease P** *NUCLEIC ACIDS RESEARCH*
Liu, X., Chen, Y., Fierke, C. A.
2014; 42 (20)
- **Ligand Concentration Regulates the Pathways of Coupled Protein Folding and Binding** *JOURNAL OF THE AMERICAN CHEMICAL SOCIETY*
Daniels, K. G., Tonthat, N. K., McClure, D. R., Chang, Y., Liu, X., Schumacher, M. A., Fierke, C. A., Schmidler, S. C., Oas, T. G.
2014; 136 (3): 822-825
- **RNase P enzymes Divergent scaffolds for a conserved biological reaction** *RNA BIOLOGY*
Howard, M. J., Liu, X., Lim, W. H., Klemm, B. P., Fierke, C. A., Koutmos, M., Engelke, D. R.
2013; 10 (6): 909-914
- **Mixed Inhibition of Adenosine Deaminase Activity by 1,3-Dinitrobenzene: A Model for Understanding Cell-Selective Neurotoxicity in Chemically-Induced Energy Deprivation Syndromes in Brain** *TOXICOLOGICAL SCIENCES*
Wang, Y., Liu, X., Schneider, B., Zverina, E. A., Russ, K., Wijeyesakere, S. J., Fierke, C. A., Richardson, R. J., Philbert, M. A.
2012; 125 (2): 509-521
- **Wheat germ agglutinin-modified trifunctional nanospheres for cell recognition** *BIOCONJUGATE CHEMISTRY*
Xie, H., Xie, M., Zhang, Z., Long, Y., Liu, X., Tang, M., Pang, D., Tan, Z., Dickinson, C., Zhou, W.
2007; 18 (6): 1749-1755