

# Our Mission

Current and future scientists deserve the most advanced facilities possible to conduct leading-edge research. The USC Mann School of Pharmacy and Pharmaceutical Sciences maintains numerous core laboratories—each unequaled in their state-of-the-art equipment and extensive support from a dedicated staff.



USC Mann School of Pharmacy and Pharmaceutical Sciences  
John Stauffer Pharmaceutical Sciences Center  
1985 Zonal Avenue,  
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[mann.usc.edu/core-facilities/](https://mann.usc.edu/core-facilities/)

USC  
Mann

Alfred E. Mann  
School of Pharmacy and  
Pharmaceutical Sciences

USC Mann School of Pharmacy and  
Pharmaceutical Sciences

# Core Facilities

<https://mann.usc.edu/core-facilities/>



# Translational Research Lab & Histology Core

USC Mann School of Pharmacy and Pharmaceutical Sciences  
Translational Research Laboratory (TRLab) is located in 10 laboratory spaces of the Pharmaceutical Sciences Center Building. The TRLab provides investigators with a state-of-the-art technological platform and technical expertise to advance translational research endeavors.

## Services

The TRLab offers user training, assisted use and consultation of highly sophisticated equipment in the following applications:

- ✓ Sample processing
- ✓ Histology
- ✓ Cell and Immunobiology
- ✓ Flow Cytometry
- ✓ Imaging
- ✓ Molecular Analysis
- ✓ Molecular Biology
- ✓ RNA/DNA Sequencing

## TR Lab and Histology Core Contact:

Dr. Zhang-Xu Liu, Associate Director  
[zxliu@usc.edu](mailto:zxliu@usc.edu)

Gabriela Lopez, Specialized Laboratory Technician  
[galopez@usc.edu](mailto:galopez@usc.edu)

[TRLabCore@usc.edu](mailto:TRLabCore@usc.edu)



*"We choose the Histology Lab because the lab is accountable for dead line of the samples we need, has competitive pricing, and the facility has well trained technicians. Our samples sometimes need to process urgently, but the Core handles very well, and the quality of the slices is very good."*

-Tatsuo Itakura, PhD  
Scientist,  
Gene Therapy R & D, GenVivo, Inc.



TR Lab



Histology Lab





# Multi-Omics, Mass Spectrometry Core

The Multi-omics Mass Spectrometry Core (MMSC) at USC Mann serves the scientific research community at USC as well as external collaborators. Our Core is equipped with state-of-the-art instruments for imaging mass spectrometry (IMS), high-throughput screening, and quantitative metabolomic and proteomics. Our Core is dedicated to actively collaborate with internal and external research groups in providing comprehensive service in MALDI imaging and high-throughput screening of small molecules, peptides, and proteins using mass spectrometry.

## Services

- ✓ MALDI MS and MS/MS
- ✓ Cryosectioning and MALDI Imaging
- ✓ Lipodomics
- ✓ Metabolomics
- ✓ Proteomics
- ✓ Quantitation of drugs and small molecules/peptides
- ✓ Top-down analysis for protein identification

## Equipments

- ✓ Thermo Scientific Q Exactive with Vanquish UPLC or Easy Nano-LC
- ✓ Sciex 6500+ with Agilent Infinity II HPLC
- ✓ SCIEX 5500 + Infinity II HPLC
- ✓ Bruker Rapiflex MALDI TOF-TOF MS
- ✓ Thermo Scientific Multidrop Combi

## Mass Spectrometry Core Contact:

Dr. Nadia Dildar, Associate Director  
[dildar@usc.edu](mailto:dildar@usc.edu)

George Wang, Research Lab Specialist  
[gwang710@usc.edu](mailto:gwang710@usc.edu)

[massspec@usc.edu](mailto:massspec@usc.edu)



*"Our lab has had a great experience working with the MS core. The staff are knowledgeable and helpful with experimental design, troubleshooting, and data interpretation. We will certainly continue to work with MS core in the future"*

- Brian Luna, PhD

Assistant Professor, Keck School of Medicine





# Medicinal Chemistry Core

Medicinal Chemistry Core at USC Mann provides support to all faculty and students in their synthetic organic/medicinal chemistry needs while assisting the larger scientific community of experts who partner with the core.

## Services

- ✓ Target Validation, Drug Design &
- ✓ Synthesis
- ✓ Hit2Lead Chemistry & Lead
- ✓ Optimization
- ✓ Small Molecule Custom Synthesis
- ✓ Scale-Up Synthesis & Purification
- ✓ Synthesis of Key Metabolites & Intermediates
- ✓ Structure Determination by NMR, MS, Element Analysis
- ✓ Support of ADMET, In vivo PK/PD studies

## Medicinal Chemistry Core Contact:

Dr. Syed Kaleem Ahmed, Associate Director  
[ahmedsye@usc.edu](mailto:ahmedsye@usc.edu)  
[medchem@usc.edu](mailto:medchem@usc.edu)

## Equipments

- ✓ Biotage Initiator +Microwave System
- ✓ CombiFlash Next Gen 300+
- ✓ ACCQPrep HP150 Prep HPLC System
- ✓ Buchi Rotavapor R-300



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The Feng lab is interested in developing small molecules that inhibit cellular enzymes in the realm of immune-metabolic regulation to combat viral infection and carcinogenesis. Dr. Ahmed's role in this project is to carry out medicinal chemistry experiments that further improve our lead compounds in pharmacokinetic and pharmacodynamic behavior. Our ongoing collaboration is currently funded by a pilot R21 grant from the NIAID

- Pinghui Feng, PhD  
Department of Molecular  
Microbiology and Immunology USC