



KLRC Analytical Laboratory

The Kansas Lipidomics Research Center's Analytical Laboratory utilizes electrospray ionization (ESI) tandem mass spectrometry (MS) to perform fast, comprehensive lipid profiling. We offer characterization and quantification of phospholipid and galactoglycerolipid molecular species from crude solvent extracts of living tissues. We can handle plant, yeast, and animal samples.

Polar lipid profiling (2016 price per sample) \$53.57*

*There is an additional discount for researchers in the State of Kansas.

We strongly recommend that 5 or more replicates of each sample are analyzed; additional charges apply to small sample sets, see:

<http://www.k-state.edu/lipid/lipidomics/prices.htm>

Other services include:

- Fatty acid analysis
- Sterol analysis
- Accurate mass analysis for structural elucidation
- Other metabolite and lipid analysis (please inquire)

In early 2003, Kansas lipid researchers established the Kansas Lipidomics Research Center. The Center's Analytical Laboratory, located at Kansas State University, opened in November 2003. The Laboratory provides a range of mass-spectrometry-based lipid analytical services to K-State scientists and to scientists from around the world.

Lipidomics is the branch of metabolomics in which non-water-soluble metabolites are studied. Metabolomics or metabolic profiling is an emerging, comprehensive research strategy to study the functions and levels of metabolites in relation to the function of genes and their proteins.

Some goals of lipidomics:

- To determine specific lipid compositional changes occurring in organismal or cellular responses
- To determine the function of genes involved in lipid metabolism or signaling
- To diagnose the physiological state of an individual organism
- To identify and utilize biomarkers



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Instrumentation

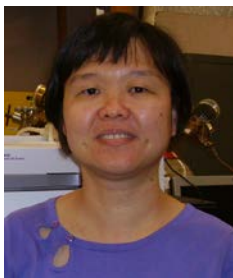
- ESI-triple quadrupole MS/MS with StepWave technology (Waters Xevo TQ-S)
- ESI-triple quadrupole MS/MS (Applied Biosystems API 4000)
- ESI-triple quadrupole MS/MS with ion trap capability (Applied Biosystems Q-Trap)
- ESI-quadrupole/time-of-flight hybrid MS/MS (Applied Biosystems Q-STAR Elite)
- Gas chromatograph/MS with CI/EI (Agilent)
- Gas chromatograph/MS with EI and GC/FID capability (Agilent)
- Advion chip-based ESI sample introduction
- Mini-PAL autosamplers
- Single quadrupole MS (Agilent)



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Pam Tamura
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Specializing in ESI-MS and Accurate Mass



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Specializing in GC-MS

KLRC's Mission

The mission of the Kansas Lipidomics Research Center is four-fold:

- The Analytical Laboratory provides comprehensive, quantitative profiling of lipid molecular species with high sample throughput, using mass spectrometric technologies.
- The Technology Development Component works to expand lipid profiling and other metabolomic capabilities.
- The Scientific Research Component promotes collaborative research among lipid scientists and provides training opportunities for postdoctoral, graduate, and undergraduate students.
- Data processing software LipidomeDB Data Calculation Environment was developed in conjunction with scientists at the University of Kansas (KU).

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KLRC: <http://www.ksu.edu/lipid/lipidomics/>