

Metabolomic Analysis Services

Accurate, High-Throughput, Fully Quantitative

TMIC provides a single-source destination for comprehensive, quantitative metabolomic profiling. Equipped with more than \$20 million in cutting-edge analytical instrumentation, TMIC routinely performs metabolomic studies for clients in medicine, agri-food research, and environmental science.

Platform specific metabolomic assays – (fully quantitative)

- Direct flow injection mass spectrometry (DI-MS)
- Quantitative NMR spectroscopy
- Quantitative GC-MS
- Quantitative GC-MS/MS (EI, PCI, NCI available)
- Quantitative GC/GC-MS/MS (EI, PCI, NCI available)
- Targeted metabolomic profiling in complex mixtures GCxGC-TOFMS (EI only)
- Quantitative lipidomics

Global (untargeted) metabolomic profiling

- Untargeted metabolomics by GC-MS (EI only)
- Untargeted metabolomics by GCxGC-TOFMS (EI only)
- Untargeted metabolomics by UPLC-FT-MS
- Untargeted metabolomics by RPLC-QTOF-MS and MS/MS
- Untargeted lipidomics by RPLC-QTOF-MS and MS/MS



- Untargeted metabolomics by DI-FTICR-MS
- Untargeted metabolomics by isotope labeling 1 D LC-MS
- Untargeted metabolomics by isotope labeling 2 D LC-MS
- Untargeted lipidomics by 1D UPLC-MS
- Metabolite identification offline or online LC-MS/MS

Targeted metabolomic profiling - class specific assays

- Oxylipin analysis
- Vitamin analysis- water soluble vitamins
- Vitamin analysis- fat soluble vitamins
- Endogenous vitamins and vitamin-like compounds analysis
- Bile acid analysis (I)
- Bile acid analysis (II)

- Bile acid analysis (III)
- Organic acid analysis
- Catecholamine analysis
- Lipidomics for cardiolipins
- Low-MW sugars analysis
- Acylcarnitine analysis
- Aldehyde analysis
- Oxysterol analysis
- Deoxynucleotide triphosphates (dNTPs) analysis
- Volatiles and semi-volatiles profiling by SPME-GC×GC-TOFMS (EI only)
- Nucleoside/nucleotide analysis
- Polyphenol analysis
- Anthocyanin/chlorophyll analysis
- Thiol analysis
- Carotenoid analysis
- Acyl CoA analysis
- Metal analysis (metallomics)
- Lipidomics by MALDI-MS tissue imaging
- Meat biomarkers
- High-value disease biomarker profiling

Targeted metabolomic profiling - pathway specific assays

- One-carbon metabolism
- Central carbon metabolism
- Amino acid metabolism/urea cycle metabolism
- Lipidomics for sphingolipid metabolism
- Fatty acid metabolism- short-to-long-chain fatty acids and acyl-carnitines analysis

Customized assays

- High abundance metabolites in plasma/serum
- Low abundance metabolites in plasma/serum
- Metabolomic profiling kits
- NMR kit plasma/serum and CSF
- Meat biomarkers
- High-value disease biomarker profiling
- MCID s008: Dns-labeling start-up kit

Metabolomic Reagents

- MCID hu001: Plain human urine
- MCID hu002: Dns human urine
- MCID r009: 13C DnsCl
- MCID r010: 13C DmPA
- MCID r012: 12C DmPA
- MCID r003: Dns-22-calibrants
- MCID r006-10: Dns-reagent kit
- MCID r006-50: Dns-reagent kit
- MCID r006-100: Dns-reagent kit
- MCID r007-10: DmPA-reagent kit
- MCID r007-50: DmPA-reagent kit
- MCID r007-100: DmPA-reagent kit

Bioinformatics Support

- Bioinformatics and biostatistics with detailed reports and data interpretation
- Chemometric analysis

Custom Services

- Specialized sample extraction
- Specialized compound analysis
- Methods development
- Metabolite identification using offline or online LC-MS/MS
- Study design consultation

