Scientists

TMIC is led by:
Dr. David Wishart
Dr. Christoph Borchers
Dr. Liang Li
Dr. James Harynuk

Dr. Wishart and Dr. Li previously led the Human Metabolome Project. Dr. Borchers is the Director of the UVic Genome BC Proteomics Centre, and Dr. Harynuk has a background in GC-MS for a wide range of applications.

Together they provide scientific leadership for TMIC, which is staffed by an experienced team of chemists, biologists, NMR/MS spectrometrists, technicians, statisticians, bioinformaticians and managers.

Contact Us

E-mail: info@metabolomicscentre.ca

High-quality, cutting-edge, comprehensive and quantitative metabolomics services

www.metabolomicscentre.ca
About Us

The Metabolomics Innovation Centre (TMIC) has a unique combination of infrastructure and expertise for performing a wide range of metabolomics cutting-edge studies for:

- Clinical trials research
- Biomedical and biochemical studies
- Biomarker discovery and validation
- Environmental testing
- Food composition analysis
- Agriculture research
- Wine and beer profiling

TMIC has laboratory facilities at both the University of Alberta (Edmonton, AB) and the University of Victoria (Victoria, BC)

TMIC is also partnered with the Metabolomics Technology Demonstration Centre, a facility specialized in designing and commercializing novel metabolomics technologies.

A Leader in Metabolomics Research and Services

- Identification and quantification of up to 3000 chemicals in biological samples
- 5X more comprehensive than most other services
- Access to >$26 million in state-of-the-art metabolomics infrastructure
- Decades of combined metabolomics experience in many sample types and model organisms
- Expertise includes chemistry, biology, NMR / Mass spectroscopy, statistics & bioinformatics
- Quantitative metabolomics analysis using NMR, GC-MS, HPLC-MS, LC-MS, DI-MS, ICP-MS, lipidomics, plus specially customized methods
- Emphasis on technology development to continue to expand quantifiable metabolites and services offered

Services & Technologies

TMIC specializes in quantitative metabolomics analysis combining NMR, GC-MS, GCxGC-MS, HPLC-UV/FD, LC-MS, DI-MS, ICP-MS and bioinformatics. Specialized services and technologies include:

- Customized assay development
- Lipidomics
- Tissue imaging
- Automated tools for metabolomics data analysis
- Metabolomics kits
- The Human Metabolome Library

<table>
<thead>
<tr>
<th>Analysis</th>
<th>Classes Detected</th>
<th>Detection Limits</th>
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<tbody>
<tr>
<td>NMR</td>
<td>Amino acids, alcohols, amines, sugars, organic acids, water soluble metabolites</td>
<td>Micromolar (10^-6)</td>
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<tr>
<td>GC-MS</td>
<td>Amino acids, organic acids, fatty acids, bile acids, thiols</td>
<td>Nanomolar (10^-9)</td>
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<tr>
<td>LC-MS DI-MS</td>
<td>Amino acids, biogenic amines, primary amines, acylcarnitines, carbohydrates, phospholipids, sphingolipids</td>
<td>Nanomolar (10^-9)</td>
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<tr>
<td>HPLC-UV HPLC-FD</td>
<td>Aromatics, secondary metabolites including polyphenols, carotenoids, vitamins (B, C, D, E, A), lipids, nucleotides and others</td>
<td>Micromolar to Picomolar (10^-6 to 10^-12)</td>
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<tr>
<td>ICP-MS</td>
<td>Up to 40 Trace metals</td>
<td>Micromolar (10^-9)</td>
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<tr>
<td>HPLC-ELSD</td>
<td>Phospholipids, TAGs, DAGs, MAGs, CEs, and free fatty acids</td>
<td>Nanomolar (10^-9)</td>
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<tr>
<td>Tissue Imaging</td>
<td>Fatty acids, lipids, acyl carnitines, drug molecules and metabolites in situ</td>
<td>Micromolar (10^-9)</td>
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