

BROADER chemical discovery for a new DEPTH of insight into human biology and drug response

There are tens of thousands of unknown molecules circulating in human blood – thousands of which could represent robust biomarkers.

Sapient's next-generation rapid liquid chromatography-mass spectrometry (rLC-MS) systems and follow-on technology pipeline enable rapid, comprehensive profiling of both known and unknown small molecule chemistries.

CHEMICAL BREADTH Examples of chemistries captured, not an exhaustive list

CHEMICAL DEPTH

NONTARGETED, HIGH-THROUGHPUT SCREENING

rLC-MS HESI/APCI

Bruker timsTOF Pro 2



POLAR METABOLITES

- ⬡ Amino acids
- ⬡ Central carbon compounds
- ⬡ Nucleic acids
- ⬡ Nucleotides
- ⬡ Organic amines
- ⬡ Neurotransmitters

POLAR LIPIDS

- ⬡ Glycerophospholipids
- ⬡ Short chain fatty acids
- ⬡ Endocannabinoids
- ⬡ Acylcarnitines
- ⬡ Bile acids
- ⬡ Oxylipins
- ⬡ Eicosanoids

NONPOLAR LIPIDS

- ⬡ Hormones (APCI)
- ⬡ Diglycerols
- ⬡ Triglycerols
- ⬡ Ceramides
- ⬡ Sterol esters
- ⬡ Cardiolipins
- ⬡ FAHFAs

Utilizes a custom mixed-mode column coupled with multiple step gradient elutions to capture broad chemistries in <1 minute analytical cycle time.

CONFIRMATION OF KEY SIGNALS VIA TARGETED METHODS

LC-MS

Thermo QE Orbitrap™



POLAR METABOLITES

- ⬡ Amino acids
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POLAR LIPIDS

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- ⬡ Oxylipins
- ⬡ Eicosanoids

NONPOLAR LIPIDS

- ⬡ Diglycerols
- ⬡ Triglycerols
- ⬡ Cardiolipins
- ⬡ FAHFAs

Provides ultra high resolution and mass accuracy with quantitative signals.

GC-MS

Agilent GC-MS



POLAR LIPIDS

- ⬡ Short chain fatty acids

NONPOLAR LIPIDS

- ⬡ Sterol esters

Offers ultra low mass detection range with detection of volatile compounds and those not suitable for ESI.

LC-QQQ

Agilent Ultivo™



POLAR LIPIDS

- ⬡ Endocannabinoids

Enables MRM quantitation with high sensitivity and very wide linear range.

CLINICAL ASSAY DEVELOPMENT



LC-QQQ also provides absolute quantitation to translate specific metabolites into clinical assays for use in GLP or CLIA settings.

15K+
small molecule biomarkers assayed per biosample via rLC-MS

Sapient focuses on chemistries with molecular weight of

<2,000
daltons

Sapient can identify

700+

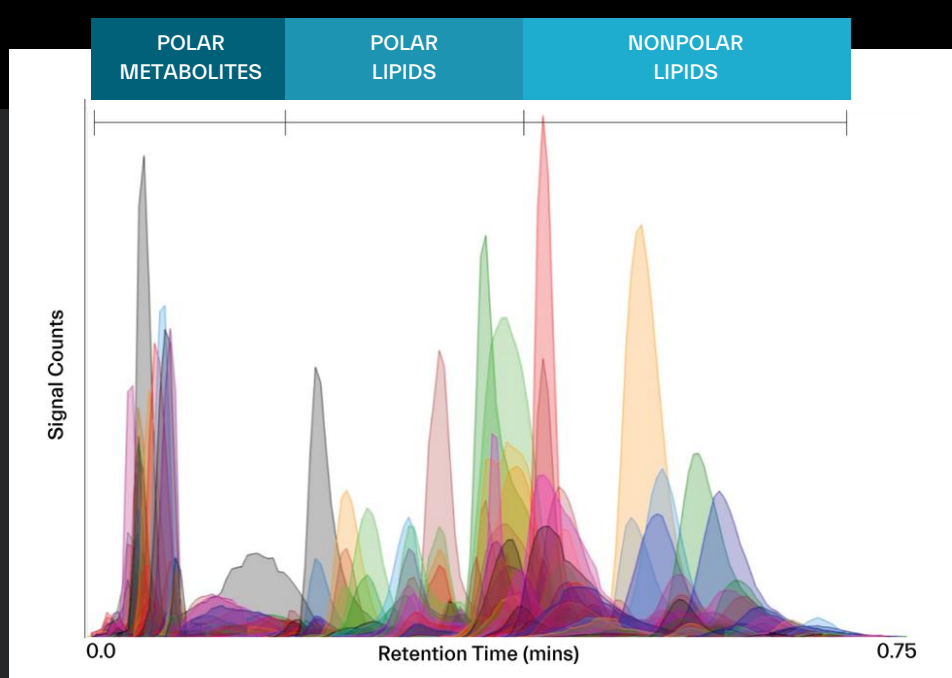
known molecules from initial rLC-MS analysis using our metabolite standards library

Sapient can perform

structural elucidation

of key unknown molecules, including isolation and synthesis.

EXAMPLE OF rLC-MS DATA OUTPUT



Explore biomarkers more broadly and translate discoveries most efficiently

With high-powered methods to identify and translate novel small molecule biomarkers at speed, scale, and with high specificity, Sapient is the single partner you can rely on for your complete biomarker development workflow – from discovery to diagnostic.