

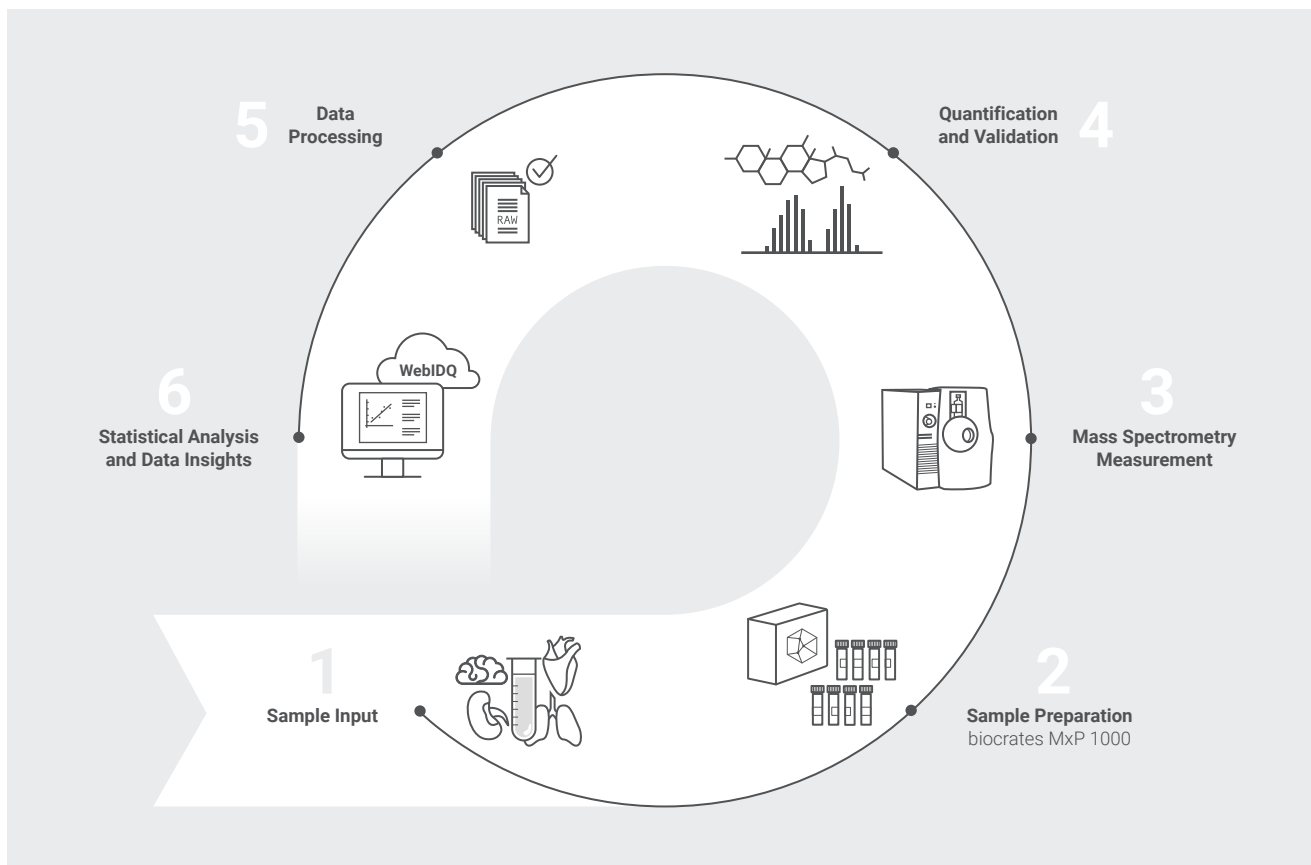
# METABOLOMICS AND LIPIDOMICS FOR BIOMARKER DISCOVERY AND CLINICAL TRANSLATION

**Quantitative Profiling of >1,200 Small Molecules and Lipids to Explore Disease Mechanisms, Therapeutic Effects, and Metabolic Phenotypes**

Metabolomics and lipidomics offer a direct view of biological activity, capturing dynamic phenotypes that complement genomics, transcriptomics, and proteomics. These data are critical for understanding disease mechanisms, patient stratification, and therapeutic response. Biognosys, a leader in proteomics CRO services, now offers the biocrates MxP® Quant 1000 kit, an established and standardized solution for absolute quantification of >1,200 metabolites and lipids across >100 biological pathways.

Scalable, quality-controlled workflow supports a wide range of matrices and species, delivering reproducible data across timepoints and study sites, ideal for longitudinal and large-scale studies. By integrating biocrates metabolomics and lipidomics into its portfolio, Biognosys expands its CRO expertise to enable comprehensive multiomic solutions for drug discovery and translational research.

Figure 1. From Project Design to Data Insights



## HIGHLIGHTS

### Quantitative and Standardized

Absolute quantification of 1,233 metabolites with isotope-labeled internal standards and integrated quality control, plus 648 derived sums and ratios for enhanced biological interpretation.

### Comprehensive Pathway Coverage

Profiles over 100 biological pathways spanning energy metabolism, mitochondrial function, immune response, inflammation, and host-microbiome interaction.

### Flexible Sample Input

Compatible with a broad range of biofluids and tissue sample types across human and preclinical species with low input volumes required ( $\geq 40 \mu\text{L}$  biofluid;  $\sim 200 \text{ mg}$  feces).

### Scalable and Robust

Standardized workflows and automation enable processing of hundreds of samples per week, suitable for cohort and longitudinal studies.

### Ready for Interpretation

Normalized concentration data and clinically relevant sums and ratios, classified by disease indication. Output is publication-ready and fully compatible with downstream statistical and pathway analysis.

### High Data Confidence & CRO Expertise

Built on validated biocrates technology with strict QC and reproducibility standards. Our experienced team provides guidance on study design, matrix selection, and biological interpretation.

## KEY APPLICATIONS

### Biomarker Discovery and Validation

Identify metabolic biomarkers for diagnosis, prognosis, or therapeutic monitoring.

### Mechanistic Disease Research

Reveal metabolic dysregulation across therapeutic areas, e.g. cardiometabolic disorders, neurodegeneration, cancer, and liver disease.

### Mechanism of Action and Toxicity Profiling

Assess metabolic response, and off-target effects in preclinical and clinical studies.

### Host–Microbiome Interaction

Quantify key microbial and host-derived metabolites across biofluids and feces.

### Nutritional and Lifestyle Intervention

Evaluate metabolic impact of diet, supplements, and exercise by profiling essential nutrients and metabolic fitness markers.

### Immunometabolism and Inflammation

Track immune cell metabolism and inflammatory cascades to support immunological and autoimmune research.

### Aging and Longevity Studies

Characterize metabolic signatures of aging, frailty, and health span.

Table 1. List of Metabolic Pathways Covered in MxP® Quant 1000

Small Molecule Panel   327 Metabolites, 24 Classes	Lipid Panel   906 Metabolites, 25 Classes
<ul style="list-style-type: none"><li>– Alkaloids (2)</li><li>– Amine oxides (1)</li><li>– Amino acids (20)</li><li>– Amino acid-related (77)</li><li>– Bile acids (24)</li><li>– Biogenic amines (10)</li><li>– Carboxylic acids (8)</li><li>– Catechols (3)</li><li>– Cresols (2)</li><li>– Dicarboxylic acids (25)</li><li>– Fatty acids (39)</li><li>– Hormones and related (5)</li><li>– Indoles and derivatives (18)</li><li>– Nucleobases (5)</li><li>– Nucleobase-related (14)</li><li>– Nucleotides (2)</li><li>– Organic acids (16)</li><li>– Phenolic acids (22)</li><li>– Phenoxy compounds (2)</li><li>– Polyamines (7)</li><li>– Pyridinecarboxylic acids (6)</li><li>– Tricarboxylic acids (3)</li><li>– Vitamins and cofactors (9)</li></ul>	<ul style="list-style-type: none"><li>– Acylcarnitines (40)</li><li>– Ceramides (29)</li><li>– Cholesteryl esters (22)</li><li>– Diglycerides (41)</li><li>– Dihexosylceramides (8)</li><li>– Dihydroceramides (8)</li><li>– Hexosylceramides (20)</li><li>– Lysophosphatidic acids (8)</li><li>– Lysophosphatidylcholines (12)</li><li>– Lysophosphatidylethanolamines (43)</li><li>– Lysophosphatidylglycerols (10)</li><li>– Lysophosphatidylinositols (15)</li><li>– Lysophosphatidylserines (12)</li><li>– Monoglycerides (12)</li><li>– Phosphatidic acids (41)</li><li>– Phosphatidylcholines (76)</li><li>– Phosphatidylethanolamines (95)</li><li>– Phosphatidylglycerols (64)</li><li>– Phosphatidylinositols (53)</li><li>– Phosphatidylserines (18)</li><li>– Sphinganine and sphingosine (8)</li><li>– Sphinganine and sphingosine phosphates (8)</li><li>– Sphingomyelins (14)</li><li>– Triglycerides (242)</li><li>– Trihexosylceramides (6)</li></ul>
<b>1,233 Metabolites + 648 Clinically Relevant Sums and Ratios</b>	



Ready to integrate functional metabolomics and lipidomics into your study?

Contact our scientific team to discuss your project at [biognosys.com/contact](https://biognosys.com/contact).

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NEXT GENERATION PROTEOMICS