



UNTARGATED METABOLOMIC SERVICE

Untargeted Metabolomics is a discovery-based method focusing on global detection and relative quantification of small molecules (less than 1000 Da) that serve as substrates, intermediates, or products of cell metabolism. Metabolomics aims to find relative relationship between metabolites (such as vitamins, lipids, amino acids, organic acids, etc) and biological and environmental factors.

Why do we use untargeted metabolomics?

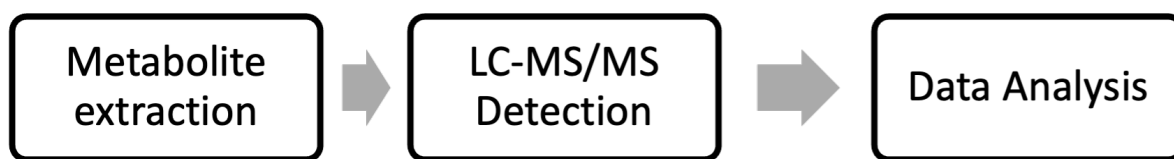
Since this method is unbiased in nature as well as providing a comprehensive analysis of the sample, it is suitable for generating hypothesis in pilot studies that can be further refined with targeted approaches. It is also the best method to discover novel biological responses since it is a collection of data without pre-existing knowledge bias.

What compounds can be detected using untargeted metabolomics?

Using this method, we can detect non-polar or hydrophobic compounds as well as polar or hydrophilic compounds. Examples of non-polar compounds: steroid hormones, carotenoids, fat-soluble vitamins, free fatty acids, bile acids, lipids, etc. Examples of polar compounds: carbohydrates, amino acids, nucleotides, organic acids, water-soluble vitamins, polyamines, CCM (Central Carbon Metabolism), etc.

Capture as Many Metabolites as Possible in a Single Analysis

WORKFLOW



SAMPLE REQUIREMENT

Sample Type	Recommended Sample Amount	Recommended Sample Amount	
Serum/plasma	≥250 µl	≥50 µl	
Urine	≥500 µl	≥50 µl	
Animal and Clinical Tissue	≥200 mg	≥25 mg	
Feces and Intestinal Contents	≥200 mg	≥50 mg	
Cell	10 ⁷	≥5×10 ⁶	
Microorganism	≥10 ⁷ cells or ≥100 mg	≥5×10 ⁶ cells or ≥25 mg	
Culture Medium/Fermentation Medium	1 ml	≥100 µl	
Milk	≥1 ml	-	
Other Bodily Fluid (Amniotic Fluid, Saliva, Hemolymph, Cerebrospinal Fluid, etc.)	≥250 µl	≥50 µl	
Plant Tissue	Fresh Tissue	≥1 g	≥100 mg
	Freeze-dried Tissue	≥200 mg	≥25 mg
	Traditional Medicine Decoction	Freeze-dried: ≥200 mg; Solution: ≥2 ml	Freeze-dried: ≥25 mg; Solution: ≥100 µl
	Traditional Medicine Pill Powder	≥1 g	≥25 mg

Some of The Data Analysis for Untargeted Metabolomics

- **Global Metabolite Analysis.**
 - Detection and analysis of compounds.
 - Trend analysis.
- **Differential Merabolite Screening.**
 - Fold-change analysis, T-test
 - Volcano plot
- **Differential Metabolite Analysis in a Single Comparison Groups.**
 - Correlation analysis (chord plot, network plot)
 - Enrichment analysis (bar chart, bubble chart)
- **Differential Metabolite Analysis of All Comparison Groups**
 - Venn diagram
 - Cluster heatmap
- **Raw Files Available Upon Request**



PT. Genetika Science Indonesia

Green Lake City, Rukan Great Wall Blok C No. 19-21,
Kel. Petir, Kec. Cipondoh, Kota Tangerang,
Banten 15147, Indonesia.

SCAN HERE



www.ptgenetika.com



info@ptgenetika.com



[@genetikascience](https://www.instagram.com/genetikascience)



(021)5433 2034