Comprehensive Global Metabolomics Analysis by Chemical Isotope Labeling LC-MS

TMIC
The Metabolomics Innovation Center

Provided by TMIC-Li Node

Metabolite/Pathway Coverage

A total of 8000+ metabolite candidates with 1000+ metabolites with identification, including:

- **All metabolites** (600+ with identification) in Basic and Elevated Global Metabolomics Analysis
- Small Sugars (8+)
- Short-Chain Fatty Alcohols (5+)

The metabolites cover more than 100 pathways, including:

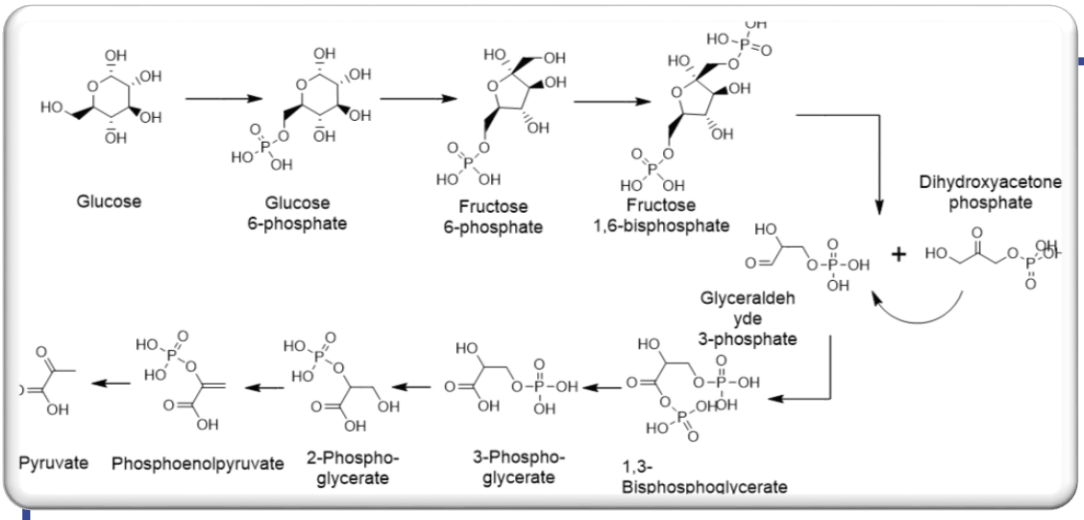
1) **All pathways with higher coverage** in Basic and Elevated Global Metabolomics Analysis, e.g.,

- ✓ Arginine and Proline Metabolism (31)
- ✓ Tryptophan Metabolism (27)
- ✓ Phenylalanine Metabolism (22)
- ✓ Phenylpropanoid Biosynthesis (17)
- ✓ Tyrosine Metabolism (30)
- ✓ Cyanoamino Acid Metabolism (23)
- ✓ Citric Acid Cycle (8)
- ✓ Aminobenzoate Degradation (19)

2) **Additional new pathways** are covered, e.g.,

- ✓ Fructose and Mannose Metabolism (15)
- ✓ Glycolysis / Gluconeogenesis (8)
- ✓ Starch and sucrose metabolism (5)
- ✓ Galactose Metabolism (10)
- ✓ Pentose phosphate pathway (5)
- ✓ ……

Pathway Example



Glycolysis

Coverage with **Comprehensive** Analysis

- Acetic acid
- Lactic acid
- Glucose
- Pyruvic acid
- Glucose 6-phosphate /Fructose 6-phosphate
- Glycerone phosphate /Glyceraldehyde 3-phosphate
- 3-Phospho-glyceric acid/ 2-Phospho-glyceric acid

Significance

Glucose is the main source of fuel for most organisms. As the major component of metabolism to produce energy in the form of ATP from glucose, glycolysis is an essential metabolic pathway. The process also produces useful intermediates for other metabolic pathways, such as the synthesis of amino acids or fatty acids.