

Metabolomics Overview

Targeted vs Untargeted

- Targeted: quantify specific metabolites
- Untargeted: broad metabolite profiling
- Semi-targeted approaches

Primary Metabolites

- Central metabolism (glycolysis, TCA)
- Amino acids, nucleotides
- Energy production molecules

Secondary Metabolites

- Plant natural products
- Signaling molecules
- Defense compounds

Metabolic Flux

- Dynamic metabolite changes
- Isotope tracing (^{13}C , ^{15}N)
- Pathway activity measurement