

Hands-on MetaboAnalyst

Data Upload

- Peak intensity table
- Sample groups defined
- Metabolite IDs (HMDB, KEGG)

Normalization

- Sample-specific normalization
- Log transformation
- Scaling methods (auto, pareto)

Statistical Analysis

- t-tests, ANOVA
- PCA, PLS-DA
- Volcano plots, heatmaps

Pathway Analysis

- Enrichment analysis
- Topology analysis
- Visual pathway maps