

A

Data Processing

Missing value handling
 Biological replicate aggregation
 Normalization & scaling
 Clustering
 Significant feature detection

Causality

Convergent Cross Mapping
 Granger Causality Test

Correlation

Canonical Correlation Analysis
 Dynamic-Time-Warping
 Cross-Correlation Function
 Spearman Correlation Coefficient
 Pearson Correlation Coefficient

Visualization

Heatmap
 Similarity network
 Expression trend
 Dimensionality reduction
 Volcano plot
 Importance of features

Heuristic Ranking

Potential gene-metabolite pairs

AI Agent

GPT 3.5 from OpenAI API

B

