

# Transcriptome + Metabolome

In systems biology research, biological processes and gene regulatory networks are complex and dynamic. It is often insufficient to use a single dataset to study systems biology. Correlating transcriptomic data that has a large number of differentially expressed genes with differential metabolites detected by metabolomics can pinpoint key genes, metabolites, and metabolic pathways that are closely associated with internal changes in the system, and thereby explain biological problems in a more holistic approach.



Coexpressed transcriptome and metabolome



Converged metabolic pathway

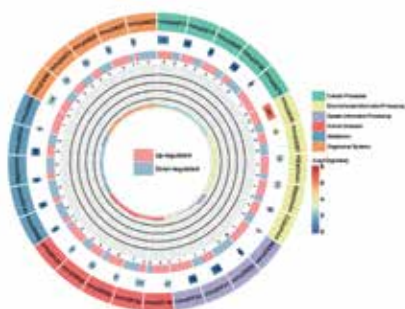


Enable major regulation networks construction

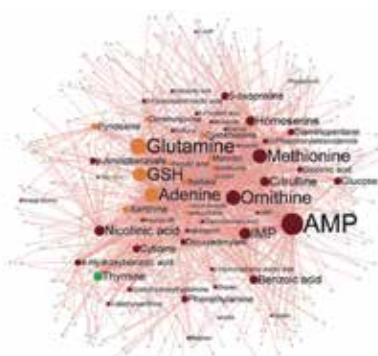


Gain holistic view of biological systems

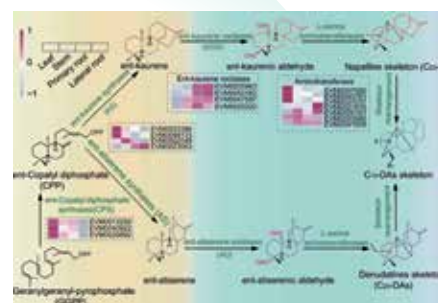
## Data Analysis



Gene enrichment circle map



Correlation network



Converging metabolic pathway

## Selected Publications

Year	Journal	Title	Species
2023	New Phytologist	A comprehensive metabolic map reveals major quality regulations in red flesh kiwifruit ( <i>Actinidia chinensis</i> )	Kiwifruit
2023	Plant Physiology	Transcriptomic and metabolomic analysis reveals a protein module involved in preharvest apple peel browning	Apple
2023	Plant Biotechnology Journal	The miR156b-GmSPL2b module mediates male fertility regulation of cytoplasmic male sterility-based restorer line under high-temperature stress in soybean	Soybean
2022	PNAS	A multiomic study uncovers a bZIP23-PER1A-mediated detoxification pathway to enhance seed vigor in rice	Rice
2021	Science Advances	Low ABA concentration promotes root growth and hydrotropism through relief of ABA INSENSITIVE 1-mediated inhibition of plasma membrane H <sup>+</sup> -ATPase 2	Arabidopsis
2020	Molecular Plant	MicroTom Metabolic Network: Rewiring Tomato Metabolic Regulatory Network throughout the Growth Cycle	Tomato



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