

Computational analysis on *Mannheimia succiniciproducens* metabolic network for succinic acid production

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Biorefineries aim at overproducing industrially valuable chemicals from biomass, thereby replacing conventional petroleum-based processes. Among industrial platform chemicals, succinic acid, a four-carbon dicarboxylic acid, serves as an important precursor of various valuable chemical polymers and monomers. To improve bio-based succinic acid production, we designed that the combined elementary modes and clustering analyses provide insights on microbial metabolic network with respect to the overproduction of a target chemical and potential gene manipulation targets in metabolic engineering. This strategy was successfully applied to overproduction of succinic acid using *Mannheimia succiniciproducens*, a native succinic acid overproducer.

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