

Metabolic engineering for the production of C₄-chemical precursor in *Mannheimia succiniciproducens*

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Due to environmental problem, oil-based industries should be replaced to renewable bio-based industries. Especially, C₄ chemicals such as 1,4-butanediol, gamma-butyrolactone and tetrahydrofuran were very important chemicals in our daily life. In this article, we report development of metabolically engineered *Mannheimia succiniciproducens* strains capable of efficiently producing 4-hydroxybutyrate. Here we report development of a metabolically engineered strain of *Mannheimia succiniciproducens* that produces 4-hydroxybutyrate which is a C₄ chemical precursor at high titer. The strain was constructed using *Mannheimia succiniciproducens* LPK7 with overexpressing 4-hydroxybutyrate synthesis enzyme which is Succinyl-CoA synthetase, CoA dependent succinate semialdehyde dehydrogenase and 4-hydroxybutyrate dehydrogenase. This system can be used for development of C₄-chemicals in bio-platform. [This work was supported by the Technology Development Program to Solve Climate Changes on Systems Metabolic Engineering for Biorefineries. (NRF-2012-C1AAA001-2012M1A2A2026556)]