

### Effect of Overexpressing Phosphoenolpyruvate Carboxykinase on Succinic Acid Production in *Escherichia coli*

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Succinic acid has various uses as a precursor for industrially important chemicals, pharmaceuticals, and biopolymers. Among those, native succinic acid producers including *Mannheimia succiniciproducens* were found to contain phosphoenolpyruvate (PEP) carboxykinase as a main catalyst for the carboxylation of PEP yielding oxaloacetate, a key intermediate for succinic acid. Hence, we employed *M. succiniciproducens* PEP carboxykinase to *E. coli* which produced succinic acid by enhancing PEP pool under the anaerobic condition. Consequently, we found the advantages of using PEP carboxykinase from *M. succiniciproducens* and developed enhanced succinic acid producing *E. coli* strain in the aspect of both productivity and yield with reduced amounts of byproducts. [This work was supported by the Korean Systems Biology Research Project (20100002164) of the Ministry of Education, Science and Technology (MEST) through the National Research Foundation of Korea. Further support by the World Class University Program (R32-2008-000-10142-0) through the National Research Foundation of Korea funded by the MEST is appreciated.]