

Production of a grape flavoring compound by metabolically engineered *Escherichia coli*

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Methyl anthranilate (MANI) is a widely used compound to give grape scent and flavor, but is currently produced by petroleum-based processes. Here, we report the direct fermentative production of MANT from glucose by metabolically engineered *Escherichia coli* and *Corynebacterium glutamicum* strains harboring a synthetic plant-derived metabolic pathway. Fed-batch cultures of the engineered *E. coli* and *C. glutamicum* strains in two-phase cultivation mode led to the production of 4.47 and 5.74 g/L MANT, respectively, in minimal media containing glucose. The metabolic engineering strategies developed here will be useful for the production of volatile aromatic esters including MANT. [This work was supported by the Technology Development Program to Solve Climate Changes on Systems Metabolic Engineering for Biorefineries from the Ministry of Science, ICT and Future Planning (MSIP) through the National Research Foundation (NRF) of Korea (NRF-2012M1A2A2026556 and NRF-2012M1A2A2026557)]