Delvelopment of an amino acid-based 1-propanol production pathway *via* metabolic engineering in *Escherichia coli*

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1-propanol has been considered as a next generation biofuel that can be used as a gasoline substitute. Here we suggest a novel biosynthetic pathway for 1-propanol production using an amino acid overproducing *Escherichia coli* strain. The highest titer of 1-propanol (3.5 g/L), performed by Atsumi et al., has been produced in metabolically *engineered Escherichia* coli harboring *Methanococcus jannaschii* citramalate synthase (CimA), which converts pyruvate directly into 2-ketobutyrate. The previously reported L-threonine overproducing *E. coli* TH20 strain was used in this study. Deletion of competing pathways and *in silico* flux response analysis for the carbon source optimization successfully generated an *E. coli* strain producing 1-propanol. Additional metabolic engineering of the resulting strain further improved the titer.
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