Metabolically Engineered *Escherichia coli* and *Corynebacterium glutamicum* for the Production of 1,5-diaminopentane

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Bio-based production of 1,5-diaminopentane is an alternative to the petroleum-based chemical synthesis. Here, we developed metabolically engineered *Escherichia coli* and *Corynebacterium glutamicum* overproducing 1,5-diaminopentane. In E. coli, degradation pathways of 1,5-diaminopentane were inactivated and *cadA* (lysine decarboxylase) was overexpressed. Chromosomal promoter exchange by *trc* promoter of *dapA* gene (dihydrodipicolinate synthase) was done to increase L-lysine biosynthetic pool. The strain produced 9.61 g/L of 1,5-diaminopentane in fed-batch culture. *C. glutamicum* (U2 strain), is used to overexpress *cadA* gene. However, 1,5-diaminopentane was not produced and L-lysine was detected in the medium. The *cadA* gene was then modified by codon adaptation program. *C. glutamicum* U2 strain overexpressing the optimized *cadA* produced 31.94 g/L of 1,5-diaminopentane in fed-batch culture. (NRF-2012M1A2A2026556 and NRF-2012M1A2A2026557).