

## Metabolic Engineering of *Corynebacterium glutamicum* for the Production of 1, 5-diaminopentane

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Bio-based production of 1,5-diaminopentane, also known as cadaverine, from renewable feedstock is a promising and sustainable alternative to the petroleum-based production. Here, we report development of a metabolically engineered *Corynebacterium glutamicum* strain that produces it. L-lysine decarboxylase, which converts L-lysine directly to 1,5-diaminopentane, was amplified by plasmid-based overexpression of the *cadA* gene under the *tac* promoter in an industrial L-lysine producer *C. glutamicum* (U2 strain). However, the recombinant *C. glutamicum* (U2/pCE*cadA*) did not produce 1,5-diaminopentane and L-lysine was still detected in the culture medium. Thus, the *cadA* gene was modified using a codon adaptation program. With the redesigned *cadA* gene, we achieved 31.94 g/L of 1,5-diaminopentane from glucose without exogenous feeding of L-lysine by fed-batch fermentation of *C. glutamicum* (U2/pCE*cadA*).