

Metabolic engineering of *Corynebacterium glutamicum* for the enhanced production of glutaric acid

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Glutaric acid is a dicarboxylic acid that is used as a platform chemical for the production of plastics and plasticizers. Currently, glutaric acid is produced through a chemical process that involves toxic compounds like potassium cyanide. In this aspect, the use of bio-based microbial fermentation is a better sustainable and eco-friendly alternative process for glutaric acid production. In this presentation, we report the development of a recombinant *C. glutamicum* strain for the production of glutaric acid from glucose via 5-aminovalerate (5-AVA) and cadaverine pathway. To establish glutaric acid production via 5-AVA pathway, 5-aminovalerate transaminase, glutarate semialdehyde dehydrogenase, lysine 2-monooxygenase and δ -aminovaleramidase was expressed in recombinant *C. glutamicum*. For glutaric acid production via cadaverine pathway, 5-aminovalerate transaminase, glutarate semialdehyde dehydrogenase, putrescine transaminase, gamma-aminobutyraldehyde dehydrogenase and putrescine importer were expressed in recombinant *C. glutamicum*. The detailed strategies and results will be presented in this presentation.