

Production of gamma aminobutyric acid (GABA)
from L-glutamate (MSG) by recombinant
Escherichia coli strains

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Gamma aminobutyric acid (GABA) is the non-essential amino acid not found in natural proteins and is found in the human brain and eyes. It serves as a major inhibitory neurotransmitter with hypertensive and diuretic effects in animals. GABA has been applied in health functional foods, which may promote relaxation and relieve nervous tension. Recently, bio-based fuels and polymers have become important due to the increase of oil price and concerns about environmental pollution. Because GABA is the possible monomer for nylon 4, which is the biodegradable heat-resistant polymer, production of GABA from cheap carbon source such as L-glutamate (MSG) become important in an industrial point of view. In this presentation, we report bioconversion of L-glutamate to GABA by recombinant *Escherichia coli* expressing glutamate decarboxylase. Temperature, pH, and initial L-glutamate concentration during reaction were examined for the production of GABA.