

Study on the immobilized glutamate decarboxylase(GAD) for increase of production to gamma-aminobutyric acid(GABA)

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Glutamate decarboxylase(GAD) is the enzyme which catalyses the conversion of glutamate onto GABA, through a single step α -decarboxylation. Gamma-aminobutyric acid, a four-carbon non protein amino acid, acts as the major inhibitory neurotransmitter of the central nervous system. Other physiological functions of GABA are induction of anti-hypertensive, prevention of diabetes, diuretic and tranquilizer effects. GABA is extensively used in pharmaceutical preparations and functional foods. In this study, the optimum temperature, pH, stability and reuse efficiency was studied for immobilized GAD. And For the increase productivity of GABA, investigated buffer concentration and reaction into cation exchange resin. As the results, free enzyme and immobilized enzymes were increased final GABA concentration by changed buffer concentration.