

BIOTECHNOLOGY & BIOENGINEERING

牛奶中分离的乳酸菌CGMCC1306中谷氨酸脱羧酶分离纯化及酶学性质研究

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摘要 A *Lactobacillus brevis* CGMCC 1306 isolated from fresh milk without pasteurization was found to have higher glutamate decarboxylase (GAD) activity. An effective isolation and purification procedure of GAD from a cell-free extract of *Lactobacillus brevis* was developed, and the procedure included four steps: 30%—90% saturation (NH₄)₂SO₄ fractional precipitation, Q sepharose FF anion-exchange chromatography, sephacryl S-200 gel filtration, and resource Q anion-exchange chromatography. Using this protocol, the purified GAD was demonstrated to possess electrophoretic homogeneity via SDS-PAGE. The purification fold and activity recovery of GAD were 43.78 and 16.95%, respectively. The molecular weight of the purified GAD was estimated to be approximately 62 kDa via SDS-PAGE. The optimum pH and temperature of the purified GAD were 4.4 and 37°C, respectively. The purified GAD had a half-life of 50min at 45°C and the Km value of the enzyme from Lineweaver-Burk plot was found to be 8.22. 5'-pyridoxal phosphate (PLP) had little effect on the regulation of its activity.

关键词 [Lactobacillus brevis](#), [glutamate decarboxylase](#), [purification](#), [anion-exchange chromatography](#), [characterization](#).

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Purification and characterization of glutamate decarboxylase of *Lactobacillus brevis* CGMCC 1306 isolated from fresh milk

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Key words [Lactobacillus brevis](#); [glutamate decarboxylase](#); [purification](#); [anion-exchange chromatography](#); [characterization](#).

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