

生物化学工程、制药、食品和天然产物加工

## SA/NaCS-CaCl<sub>2</sub>/PMCG微胶囊固定化枯草杆菌HL-1发酵生产纳豆激酶

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收稿日期 2003-5-26 修回日期 2003-9-15 网络版发布日期 2008-9-1 接受日期

**摘要** 制备了海藻酸钠/纤维素硫酸钠-CaCl<sub>2</sub>/聚亚基二胍氯化氢微胶囊(SA/NaCS-CaCl<sub>2</sub>/PMCG微胶囊), 并以该微胶囊固定化培养枯草杆菌HL-1用于发酵制备纳豆激酶, 考察了PMCG对枯草杆菌生长的影响, 比较了微囊化培养与游离培养过程中的菌体生长、耗糖速率以及纳豆激酶产物分泌能力. 最后经过连续6批培养, 酶活可达到2465 IU/8226;ml<sup>-1</sup>, 是游离培养过程的3倍.

**关键词** [SA/NaCS-CaCl<sub>2</sub>/PMCG微胶囊](#) [固定化](#) [纳豆激酶](#)

分类号

## IMMOBILIZED CULTURE OF *Bacillus subtilis* IN SA/CS-CaCl<sub>2</sub>/PMCG MICROCAPSULE FOR PRODUCTION OF NATTOKINASE

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### Abstract

A SA/NaCS-CaCl<sub>2</sub>/PMCG microcapsule which can be used in biotechnology was prepared. The production of nattokinase from *Bacillus subtilis* immobilized in SA/CS-CaCl<sub>2</sub>/PMCG microcapsule was studied. The effects of PMCG on the growth of *Bacillus subtilis* were investigated. The growth rate, consumption rate of xylose and production rate of nattokinase of microencapsulated cells were compared with suspension culture. The results showed that immobilized cells grew as suspension culture for a single batch. The encapsulated fermentation had advantage in multi-batch culture. The highest activities of 2465 IU/8226;ml<sup>-1</sup> of nattokinase were reached, which was 2 times higher than that in suspension culture.

**Key words** [SA/NaCS-CaCl<sub>2</sub>/PMCG microcapsule](#) [immobilization](#) [nattokinase](#)

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