

BIOTECHNOLOGY & BIOENGINEERING

海藻酸钙胶囊化重组E.coli BL21 (DE3)生产靛蓝

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收稿日期 修回日期 网络版发布日期 接受日期

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**关键词** [calcium-alginate gel](#) [gene engineering strain](#) [immobilized cells](#) [indigo](#) [P450 BM3](#)

分类号

**DOI:**

**Production of indigo by immobilization of E. coli BL21 (DE3) cells in calcium-alginate gel capsules**

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Received Revised Online Accepted

**Abstract** The ability of catalyzing indole into indigo of gene engineering strain expressing P450 BM3 immobilized by entrapment in calcium-alginate gel capsules was examined, and various characteristics of immobilized cells were assessed. Optimum conditions for cells activity were not affected after immobilization, and pH and temperature for both free and immobilized cells were found to be pH 7.5 and 35°C, respectively. The immobilized cells exhibited a markedly improved thermal stability than free cells. After five repeated experiments, the yield of indigo with the immobilized cells retained over 94% of their original activity, which indicated that the operational stability for recycling in batch processes was improved.

**Key words** [calcium-alginate gel](#); [gene engineering strain](#); [immobilized cells](#); [indigo](#); [P450 BM3](#)

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