

RESEARCH NOTES

补料分批培养耐乙酸大肠杆菌生产人表皮生长因子

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收稿日期 2006-10-16 修回日期 网络版发布日期 接受日期 2007-4-2

摘要 An acetate-tolerant mutant of *Escherichia coli* DH5 α , DA19, was used for secretory production of human epidermal growth factor (hEGF) whose expression was under the control of *phoA* promoter. The recombinant cells were cultured in a chemically defined medium, and glucose was added at different specific provision rates during the growth and expression phases. It was found that pH had a significant effect on the extracellular hEGF production. The extracellular hEGF concentration was 75.5mg/L⁻¹, 5.2-fold of the level reached at pH 7.0, even though more acetate was produced. Nitrogen source was limited in the later growth phase. Supplementation of ammonium promoted the consumption of phosphate and reduced the time to exhaust phosphate, but the extracellular hEGF production was similar to that without supplementation of ammonium.

关键词 [human epidermal growth factor](#) [acetate-tolerance](#) [Escherichia coli](#) [pH](#)

分类号

DOI:

Production of human epidermal growth factor in fed-batch culture of acetate-tolerant *Escherichia coli*

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Received 2006-10-16 Revised Online Accepted 2007-4-2

Abstract An acetate-tolerant mutant of *Escherichia coli* DH5 α , DA19, was used for secretory production of human epidermal growth factor (hEGF) whose expression was under the control of *phoA* promoter. The recombinant cells were cultured in a chemically defined medium, and glucose was added at different specific provision rates during the growth and expression phases. It was found that pH had a significant effect on the extracellular hEGF production. The extracellular hEGF concentration was 75.5mg/L⁻¹, 5.2-fold of the level reached at pH 7.0, even though more acetate was produced. Nitrogen source was limited in the later growth phase. Supplementation of ammonium promoted the consumption of phosphate and reduced the time to exhaust phosphate, but the extracellular hEGF production was similar to that without supplementation of ammonium.

Key words [human epidermal growth factor](#); [acetate-tolerance](#); [Escherichia coli](#); [pH](#)

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