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Optimized medium for the efficient production of bacillus intermedium glutamyl endopeptidase by the recombinant bacillus subtilis

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Abstract

A nutrient medium was elaborated for the efficient production of glutamyl endopeptidase by the recombinant *Bacillus subtilis* strain AJ73 bearing the *Bacillus intermedium* 3-19 glutamyl endopeptidase gene within a multicopy plasmid. Optimal concentrations of the main nutrients, peptone and inorganic phosphate, were found using a multifactor approach. To provide for active growth and efficient glutamyl endopeptidase production, the cultivation medium of the recombinant strain should be enriched in phosphorus, organic and inorganic nitrogen sources, and yeast extract. Complex protein substrates, such as casein and gelatin, enhanced the biosynthesis of glutamyl endopeptidase. At the same time, easily metabolizable carbon sources suppressed it. The production of glutamyl endopeptidase was stimulated by the bivalent cations Ca^{2+} , Mg^{2+} , and Co^{2+} .

Keywords

Asp-specific proteinase, Biosynthesis, Glu, Glutamyl endopeptidase, Growth conditions, Recombinant strain