

The influence of carbon sources and mononucleotides on the production of extracellular alkaline phosphatase by bacillus intermedius

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Abstract

The biosynthesis of extracellular alkaline phosphatase in the streptomycin-resistant strains *Bacillus intermedius* S3-19 and S7 in the presence in the medium of 5'-nucleoside monophosphates and different sources of carbon-glucose, sodium pyruvate, sodium lactate, or glycerol-was studied. It was established that, in the presence of mononucleotides, the content of extracellular alkaline phosphatase in both strains increased; the maximal effect was caused by 5'-AMP at a concentration of 20 jig/ml. In medium with a low orthophosphate content, where active biosynthesis of alkaline phosphatase occurred, 1 % glucose and 0.5% pyruvate stimulated this process 2.5-4 times, and 2% sodium lactate and sodium pyruvate, on the contrary, inhibited it by 20-40%. Analysis of the dynamics of growth and accumulation of extracellular phosphatase in the presence of different sources of carbon in the medium gives evidence of an interrelationship between the biosynthesis of alkaline phosphatase and carbon metabolism in *Bacillus intermedius*.

Keywords

Biosynthesis, Extracellular alkaline phosphatase of bacillus intermedius, Mononucleotides, Sources of carbon