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Hydrolytic enzymes and sporulation in Bacillus intermedius

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Abstract

The investigation of the activity of extracellular hydrolytic enzymes and sporulation in the bacterium Bacillus intermedius 3-19 showed that the activity of ribonuclease is maximal in the glucose-containing growth medium, in which sporulation is suppressed. At the sporulation stages II-IV, the synthesis of phosphatase was not regulated by the factors that influence this synthesis in the phase of growth retardation. Caseinolytic activity exhibited two peaks. The first peak was observed when thiol-dependent proteinase began accumulating in the medium. The second peak corresponded to the late stages of sporulation, i.e., the stages of spore maturation and the autolysis of sporangium. The regulatory relationship between proteinase synthesis and sporulation and the possible role of extracellular phosphatases and proteinases in the sporulation are discussed. © 2002 MAIK "Nauka/Interperiodica".

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Keywords

Alkaline phosphatase, Bacillus intermedius, Glutamyl endopeptidase, Ribonuclease, Sporulation, Thiol-dependent proteinase