



## The expression of the serine proteinase gene of *Bacillus intermedius* in *Bacillus subtilis*

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### KEYWORDS

*Bacillus intermedius*;  
Serine proteinase;  
Gene expression;  
Catabolite repression;  
Regulation

### Summary

The gene encoding for *Bacillus intermedius* serine proteinase was cloned and the complete nucleotide sequence was determined. Gene expression was explored in the protease-deficient strain *Bacillus subtilis* AJ73 during different stages of growth. Catabolite repression involved in control of proteinase expression during transition state and onset of sporulation was not efficient at the late stationary phase. Salt stress leads to induction of serine proteinase production during *B. subtilis* AJ73(pCS9) post-exponential growth. Expression of proteinase in *B. subtilis* *deg*-mutants may be controlled by DegU regulator. *B. subtilis* *spo0*-mutants failed to accomplish *B. intermedius* proteinase production. These data suggest complex network regulation of *B. intermedius* serine proteinase expression, including the action of *spo0*, *degU*, catabolite repression and demonstrate changes in control of enzyme biosynthesis at different stages of growth.

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### Introduction

*Bacilli* possess a large set of regulatory responses to maintain cell viability under the conditions of

nutrient limitations. Starvation acts as an environmental signal for the cells to stop exponential growth and develop rapidly numerous post-exponential-phase adaptive responses including motility and chemotaxis, synthesis of extracellular degradative enzymes and antibiotics, competence for genetic transformation, DNA repair and

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