Biochemical and kinetic Enzymatic Properties of Serine Proteases Produced by Bacteria Isolated from Intestinal Tract of *Anticarsia gemmatalis*.

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Protease inhibitors are involved in the plant defense mechanism against infestation by insects and pathogens. Use of genes encoding inhibitors of digestive enzymes offer a promising strategy to produce plants resistant to insect attack. In order for this to occur, however, the plant will need to express a combination of inhibitors that cover the full spectrum of intestinal proteases. Insect physiology, biochemistry of digestion and local microbiota should therefore be considered. A number of intestinal proteolytic bacteria have been recently isolated from the velvetbean caterpillar. All of them were able to produce significant quantities of proteases when grown in appropriate culture medium. The present study aimed at characterizing serine proteases from *Bacillus cereus* isolated from the intestinal tract of *A. gemmatalis* using the substrates L-BApNA. There was high serine protease activity in pH 8.5 and temperature of 25 ºC. The K_{MAPP} and $V_{MÁXAPP}$ 0,15 mM were 16,64 $nM.s^{-1}$ respectively. Inhibitors of serine protease TLCK (irreversible) and Aprotinina (competitive) significantly decreased bacterial serine protease activity. combining the effect of the inhibitor of metal protease EDTA with the effect of calcium ions were obtained by serine protease calcium-dependent. Pespstatine A, an aspartyl protease inhibitor and E-64 Inibidor of cysteine proteases will not affect serine proteases bacterial. Thus, the kinetic characterization and effects of protease inhibitors on the activity of proteases produced by *B. cereus* led to the conclusion that bacteria synthesize and release enzymes of the family serine proteases into the intestinal lumen of *A. gemmatalis*.

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