Chitinases from *Bacillus thuringiensis* Active Against *Spodoptera frugiperda*, *Anticarsia gemmatalis* and *Anthonomus grandis*.

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It is believed that chitinases disrupt the integrity of the peritrophic membrane, a protective structure that separates the midgut lumen from the epithelium in several insect larvae. A synergistic action between insecticidal crystal proteins produced by Bt (Cry toxins) and chitinase has been observed during co-application of a spore suspension along with chitinase. Here, we describe the production of chitinase in Bt strains from Embrapa/Cenargen, DF, Brazil Bank. The strains used in chitinase activity assays have been selected for toxicity against *S. frugiperda*, *A. gemmatalis* and *A. grandis* larvae. In order to evaluate the relationship between cellular growth and the production of chitinase, the assays were done using bacterial cultures grown for 16h, 24h, 48h and 72h. Chitinase activity was determined by a colorimetric method using culture supernatant and chitin. The amount of N-acetylglucosamine (GlcNAc) produced was measured by development of color in acid medium (DNS). Out of the five strains toxic to against *A. grandis*, only one showed no increase in chitinase actitivity after 16h, while the other four exhibited a continued increase in activity up to 72h of growth. The two strains toxic to *S. frugiperda* and *A. gemmatalis* also showed a continuous increase in chitinase activity with time over the 72h of growth. In this way, it is possible that the production of chitinase by the strains of Bt could influence in the pathogenic activity against the insects, since the peritrophic membrane of the insects is, in part, constituted of chitin.