

Insecticidal Activity of the Protein Encoded by the *cryV* Gene of *Bacillus thuringiensis kurstaki* INA-02

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Abstract

A new host specificity was discovered with the insecticidal protein encoded by the *cryV* gene. The *cryV* gene was cloned from the *Bacillus thuringiensis kurstaki* INA-02 strain, which was selected among a number of *B. thuringiensis* isolates because of its high activity against *Spodoptera litura*. Analyses by polymerase chain reaction (PCR) revealed that INA-02 contained the *cryIA(a)* and *cryV* genes. Since no *Spodoptera* activity was observed with *B. thuringiensis sotto*, which contained only *cryIA(a)*, insecticidal activity of the protein encoded by the *cryV* gene was investigated with several insect species including *S. litura*. For bioassay, the *cryV* gene was highly expressed in an acrySTALLIFEROUS *B. thuringiensis* strain, BT51. The CryV protein from BT51 was assayed against larvae of three lepidopteran species, *Bombyx mori*, *S. litura*, and *Plutella xylostella*. The protein was highly active against *S. litura* and *P. xylostella*, suggestive that the protein contributes to the unique activity of INA-02.