

**Expression of a Fusion Protein with the Cry1Ac Protein  
and the AaHIT Protein in  
*Bacillus thuringiensis*  
Cry<sup>-</sup>B Strain**

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Expression of a fusion protein between *B. thuringiensis* crystal protein, the Cry1Ac1 and the AaHIT (*Androctonus australis* Hector insect toxin; Buthid scorpion) in *B. thuringiensis* Cry<sup>-</sup>B strain was examined. The *cry1Ac1* gene was cloned in *B. thuringiensis*-*E. coli* shuttle vector, pHT3101, under the control of the native *cry1Ac1* gene promoter (pProAc) and a gene encoding AaHIT was inserted in *Xho*I site in the middle of the *cry1Ac1* gene (pProAc-ScoR). *B. thuringiensis* Cry<sup>-</sup>B strain carrying pProAc-ScoR (ProAc-ScoR/CB) produced an inclusion body of irregular shape and the expressed fusion protein is approximately 60 kDa in size. Sporulated cells and spore-crystal mixtures of ProAc-ScoR/CB had insecticidal activity against *Plutella xylostella* larvae, showing LT<sub>50</sub> of ProAc-ScoR/CB lower than that of ProAc/CB. These results suggest that the fusion protein including a *B. thuringiensis* crystal protein and the AaHIT may be functionally expressed in *B. thuringiensis*. Further study is focusing on elucidation of the synergism of the two insecticidal proteins against insect larvae.