3-4-17. Expression of a Fusion Protein Between Cry1Ac and Green Fluorescent Protein in an Acrystalliferous *Bacillus thuringiensis*

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Expression of a fusion gene comprising *B. thuringiensis* crystal protein, *cry1Ac1* and green fluorescent protein (*gfp*) genes in *B. thuringiensis* Cry-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 and *gfp* gene was inserted at the *Xho*I site which is located after the proteolytic cleavage site, in the middle of the *cry1Ac1* gene (pProAc-GFP). *B. thuringiensis* Cry-B strain carrying pProAc-GFP (ProAc-GFP/CB) produced mRNA transcripts encoding the *cry1Ac1-gfp* fusion gene but did not produce an inclusion body. Although its expression level was relatively low, this recombinant strain expressed the fusion protein. However, immunoblot analysis, using GFP and Cry1Ac1 antibodies, demonstrated that the fusion protein was not a single species, but multiple ones with various sizes. Besides, the N-terminal fragment of Cry1Ac1 and an independent GFP were also found in *B. thuringiensis* Cry-B strain after sporulation. Sporulated cells and spore-crystal mixtures of ProAc-GFP/CB had insecticidal activity against *Plutella xylostella* larvae. These results suggest that the fusion protein including a *B. thuringiensis* crystal protein may be functionally able to be expressed in *B. thuringiensis*.