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Expression of fusion protein with the Cry1Ac protein and green fluorescent protein in an acrystalliferous *Bacillus thuringiensis* strain

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Expression of a fusion protein between *B. thuringiensis* crystal protein, the Cry1Ac1 and green fluorescent protein (GFP) 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 (pProAc) and GFP gene was inserted in *Xho*I site which was located behind the proteolytic cleavage site, in the middle of the *cry1Ac1* gene (pProAc-GFP). *B. thuringiensis* Cry⁻B strain carrying pProAc-GFP produced an mRNA transcript containing the *cry1Ac1*-GFP fusion gene but did not produce inclusion body. Although the expression level is relatively low, this recombinant strain expressed fusion protein. However, immunoblot analysis, using GFP and the Cry1Ac1 antibodies, showed that the fusion protein was not a single species, but of various sizes. Besides, the N-terminal fragment of the Cry1Ac1 and an independent GFP were also expressed in *B. thuringiensis* Cry⁻B strain after sporulation. This results mean that the fusion protein including *B. thuringiensis* crystal protein may be expressed in *B. thuringiensis*, but this protein was easily degraded.