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Identification of a Novel Crystal Protein Gene from *Bacillus thuringiensis* Isolated in Korea

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To identify novel *cryI*-type crystal protein genes, 100 *Bacillus thuringiensis* (Bt) isolates were selected on the basis of their toxicity against lepidopteran larvae. For rapid search of a large quantity of novel genes simultaneously, Bt isolates were randomly divided into 2 groups including 50 isolates each. About 2.4 kb PCR fragments were amplified from each group using universal oligonucleotide primers, ATG1-F and N400-R, designed to probe the toxic fragment regions of all known *cryI*-type genes, and cloned into pGemT-EASY vector. Restriction fragment length polymorphism (RFLP) analysis revealed 3 distinct patterns in each group. One of them, A32 clone, showed about 89% nucleotide and 91% deduced amino acid similarity with the known *cry1Ea* gene. Interestingly, the sequence of *cryA32* gene was overlapped with *cry1Ea* and *cry1Ac*, which suggested that A32 cry gene might have resulted by nucleotide rearrangement between *cry1Ac* and *cry1Ea* genes. For further characterization of the novel gene, its expression using baculovirus was performed. Expression of fusion protein by recombinant virus in Sf9 cells was analysed by SDS-PAGE.