

# Identification and Molecular Characterization of Insecticidal *cryI*-type Genes from *Bacillus thuringiensis* 2385-1

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A *Bacillus thuringiensis* (Bt) isolate, 2385-1, which showed toxicity to lepidopteran but not to dipteran was isolated from Korean soil sample and characterized. It was determined to belong to subsp. *kenyae* (H4a4c), and produced bipyramidal-shape crystal protein with a molecular weight of 130 kDa. PCR-RFLP showed that this isolate contains two novel *cryI*-type crystal genes in addition to *cryIJal* gene. To clone the toxic domain of the all *cryI*-type genes, we designed *cryI*-type specific primer set, ATG1-F and N400-R, which probe active regions of all known *cryI*-type genes. About 2.4 kb PCR fragments from Bt 2385-1 were amplified with this primer set, and cloned into pGemT-easy vector. The cloned genes were named *cryI-5*, *cryI-12* and *cryI-15*, respectively. The *cryI-5* was showed 97.9% of maximum nucleotide similarity with *cryIAb*, and *cryI-12* and *cryI-15* were showed 89.0% and 100% with *cryIJal*, respectively. For further characterization of two novel genes, their expression using baculovirus expression systems and bioassay will be performed.