

Isolation and Characterization of a Novel *Bacillus thuringiensis* Strain LY-99 from China

Xu Feng Qi<sup>1,2</sup>, Ming Shun Li<sup>1</sup>, Yong Wang<sup>1</sup>, Yang-Su. Kim<sup>1</sup>, Jae Young Choi<sup>1</sup>,  
Jian Hong Li<sup>2</sup>, and Yeon Ho Je<sup>1</sup>

<sup>1</sup> School of Agricultural Biotechnology, Seoul National University,  
Seoul 151-742

<sup>2</sup> College of Plant Science and Technology, Huazhong Agricultural  
University, Wuhan 430070, CHINA

A new *Bacillus thuringiensis* strain (Bt LY-99) having high toxicity to diamondback moth (*Plutella xylostella*) was isolated from China dust sample and characterized. It was determined to belong to subsp. *alesti* (H3a3c) by an H antisera agglutination test and produced bipyramidal inclusion. Plasmid and crystal protein patterns of Bt LY-99 were different from that of the reference strain, subsp. *alesti*. In the PCR analysis, Bt LY-99 showed different *cry*-type gene profile, compared with the reference strain, subsp. *alesti*. For identification of the active regions of all *cryI*-type genes from Bt LY-99, a PCR-restriction fragment length polymorphism (PCR-RFLP) method was used using two pairs of universal primers. About 2.4 kb PCR fragments from Bt LY-99 were amplified with this primer sets, and cloned into pGem-T easy vector. RFLP analysis revealed that Bt LY-99 contains four novel *cryI*-type crystal protein genes in addition to *cryIAa* and *cryIE* genes. For further characterization of these novel genes, their sequence and functional analysis will be performed.