Isolation and Characterization of Two Mosquitocidal *Bacillus thuringiensis* Strains from Korean Soil

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To screen mosquitocidal *Bacillus thuringiensis* strains, about 200 *B. thuringiensis* isolates from Korean soil were examined by the bioassay against mosquito larvae. Two *B. thuringiensis* strains having high mosquitocidal activity were selected and named Bt 1205-1 and Bt 1381-1. These two isolates Bt 1205-1 and Bt 1381-1 belonged to subsp. *kurstaki* (H3a3b3c) and subsp. *aizawai* (H7), respectively, by H-agglutination test using 33 antisera. Phase-contrast microscopic observation revealed that Bt 1205-1 produced small(0.7~1.5 ㎛) bipyramidal crystals and the Bt 1381-1 big(1~1.9 ㎛) bipyramidal crystals. Crystal proteins and plasmid DNA patterns of both isolates were similar to those of the type strains, subsp. *kurstaki* HD-1 and subsp. *aizawai*. PCR analysis using *cry*-gene specific primers showed that Bt 1205-1 had *cry1Aa*, *cry1Ab*, *cry1Ac*, *cry2A* and *cry4D*-type genes and Bt 1381-1 *cry1Aa*, *cry1Ab*, *cry1C*, *cry1D*-type genes. The PCR profile of Bt 1381-1 was similar to its type strain subsp. *aizawai*, but Bt 1205-1 was different from subsp. *kurstaki*. The *cry4D*-type gene which was detected in Bt 1205-1 was reported in subsp. *israelensis* and had high mosquitocidal activity. We are trying to clone this *cry4D* PCR product and analyse its sequence. And the mechanism of mosquitocidal activity of Bt 1381-1 will be further studied with biochemical and genetic approach.