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# Linkage Analysis of the Resistance Gene to *Bacillus thuringiensis* Cry1Ab-Endotoxin in the Silkworm, *Bombyx mori*

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To elucidate the resistant mechanism of the pests for *Bacillus thuringiensis* -endotoxin, the resistance gene for the Cry1Ab -endotoxin is analyzed on the model of the silkworm, *Bombyx mori*. In the last year, it was reported that the resistance gene of Cry1Ab -endotoxin it controlled by a recessive gene and the possibility of existing as multiple forms. Then, linkage analysis of the toxin resistance gene was carried out by the genomic analysis technique (SLA method), which utilizes the cDNA clones as probes.

For linkage analysis, F1 progenies from the cross strain C401 (resistance to Bt toxin) and strain E606 (susceptibility to Bt toxin) received from National Institute of Agrobiological Sciences were analyzed. In addition, BF1 progeny from the cross strain C401xE606 and strain C401 were analyzed. Hatched larvae were fed Bt toxin. The genomic DNA was extracted from survived fifth instar larvae through CsCl density gradient ultracentrifugation. The DNA was then analyzed through RFLP using probes specific for the twenty-eight linkage groups of *B. mori*.

It turned out that the resistance gene is linked to linkage group fourth (RFLP4) since all survived larvae showed a homozygous profile in their genotype. This was in contrast to the other linkage groups, which showed mixed heterozygous and homozygous profiles, indicating independent segregation in this group.