

Production of Abnormal Shape Eggs from the Silkworm
Bombyx mori infected with *Autographa californica*
Nuclear Polyhedrosis Virus

Sang Mong Lee¹, Nam Sook Park¹, Hye Jin Park², Eun Young Yun³,
Seok Woo Kang³,

Keun Young Kim³, Hung Dae Sohn² and Byung Rae Jin²

¹Miryang National University, ²Dong-A University, ³Dept. of
Sericulture and Entomology,

The National Institute of Agricultural Science and Technology, RDA

The female pupae of the silkworm, *Bombyx mori*, were injected with recombinant *Autographa californica* nuclear polyhedrosis virus (AcNPV) expressing green fluorescent protein (GFP) by percutaneous inoculation. When the 4th day-old female pupae were injected with 1×10^7 or 2×10^7 plaque forming units (pfu) of the recombinant AcNPV, silkworms significantly decreased egg number and egg weight. Furthermore, the shape of the eggs from the AcNPV-infected silkworms was divided into two types, normal and abnormal shapes. The percentage of abnormal shape eggs produced from the AcNPV-infected silkworms was 7.8% and 57.1% at 1×10^7 and 2×10^7 pfu inoculation, respectively. PCR analysis of the genomic DNA extracted from the eggs revealed that *gfp* and AcNPV ecdysteroid UDP-glucosyltransferase genes were amplified from all of both normal and abnormal shape eggs. The results reveals that AcNPV DNA, and a *gfp* gene cloned into the AcNPV DNA, and a *gfp* gene cloned into the AcNPV genome, injected in pupal stage were transmitted to eggs and remained stable until at least next generation.