Comparison of Promoter Activity of the P10 Gene Between *Bombyx mori* Nucleopolyhedrovirus Variants

Choi, Jae Young, Hye Kyung Hong, Soo Dong Woo, Mi Hyang Kim, Yeon Ho Je and Kyung Saeng Boo

Graduate School of Agricultural Biotechnology, Seoul National University

To compare the activity of the p10 gene promoter from BmNPV-K1 and BmNPV-K4 having different p10 gene promoter structure, transfer vectors pBm101 and pBm104 were constructed using these p10 promoters, respectively. For comparison of the promoter activity, *E. coli lacZ* gene was inserted into these transfer vectors, and recombinant viruses Bm101-LacZ and Bm104-LacZ were prepared. Expression level of β-galactosidase by Bm101-LacZ was about 5.5 fold higher than that by Bm104-LacZ. Also, expression of β-galactosidase by Bm101-LacZ was about 5.5 fold higher than that by BmK1-104LacZ which was constructed by cotransfection of pBm104-LacZ and genomic DNA of BmNPV-K1. In addition, expression level of β-galactosidase by Bm101-LacZ was about 1.1 fold higher than that by BmK1-LacZ expressing β-galactosidase under the control of the polyhedrin promoter. Viral replication, expression level of polyhedrin and polyhedra productivity of each recombinant virus were almost the same. These results not only showed that the difference in expression level of β-galactosidase was resulted from difference in promoter activity only, but also suggested that the expression vector using p10 promoter of BmNPV-K1 can be usefully exploited for the mass production of foreign proteins in silkworm larvae by means of oral ingestion.