Characterization of *vlf-1* Gene of *Bombyx mori* Nucleopolyhedrovirus

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The very late expression factor 1 gene, *vlf-1* is a baculovirus gene that regulates very late gene expression and also play a role in the replication of the budded form. The structure of the *vlf-1* gene was characterized from *Bombyx mori* nucleopolyhedrovirus (BmNPV). The *vlf-1* gene was localized at *Eco*RV 2.8 Kb and *Cla* I 7.0 Kb fragments of the BmNPV genome. The *Eco*RV 2.8 Kb fragment was cloned and the nucleotide sequence of about 2780 bases including the coding region of *vlf-1* gene was determined. In order to investigate the effect of *vlf-1* on very late gene expression, the *vlf-1* gene was cloned under the control of heat shock promoter of *Drosophila melanogaster*, and this transfer vector was named as pBmhv. The recombinant BmNPV, BmThv was constructed by cotransfection of genomic DNA of Bm101-LacZ and pBmhv. At early stage of viral infection(6~12 h p.i.), the transcription level of *vlf-1* from BmThv was higher than that from wild-type BmNPV-K1. However, the transcription level of *vlf-1* from BmThv was lower than that from BmNPV-K1 at late phase(24~36 h p.i.). The *vlf-1* gene of BmNPV-K1 characterized in this study showed different structure from that reported previously.