

Retrovirus-Like Elements in the *Bombyx mori* Genome

Motoko Oami¹, Naoko Omuro¹, Fumi Ohbayashi¹, Kazuei Mita², and Toru Shimada¹

¹*Department of Agricultural and Environmental Biology, University of Tokyo, Yayoi 1-1-1, Bunkyo-ku, Tokyo 113-8657, Japan and* ²*National Institute of Agrobiological Sciences, Owashi 1-2, Tsukuba, Ibaraki 305-8634 Japan*

Although the *Bombyx mori* genome contains various retrotransposons, so far retrovirus-like elements have not found. Known insect retrovirus-like elements contain ORF3 that is homologous to baculovirus envelope fusion proteins like ORF130 of LdNPV. To find such elements in *Bombyx*, we searched EST database of *Bombyx* using ORF3 of *Trichoplusia ni* TED and ORF130 of LdNPV as queries for tblastn. As a result, many ESTs showed homology to them. We determined the nucleotide sequences of these cDNAs and classified them into three groups represented by wdV30838, N---0334, and an---0870. Each cDNA contained a truncated ORF coding for a protein with a putative transmembrane domain. We screened a *Bombyx* BAC library for genes corresponding to these cDNA, and found that the haploid genome contains 11 copies of the genes for wdV30838, 4~5 copies for N---0334, and 8 copies for an--0870. We are now trying to find ORF1 and ORF2 in these elements. To analyze the transcripts of these elements, we performed Northern blotting of ovarian RNAs at early pupal stages of strain p50, using wdV30838 as a probe. The blot produced two bands, whose sizes were 9.5kb and 7.5kb. Because genomic RNAs of the known insect retroviruses are approximately 7kb in length, either of the RNAs detected in our Northern blot might be a full-length genomic RNA of a novel insect retrovirus.