

## INFECTIVITY OF A CYPOVIRUS TO NAVEL ORANGEWORM AND HOMOLOGOUS CELL LINES

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Because of its rapidly growing economic significance the navel orangeworm (NOW), *Amyelois transitella* (Lepidoptera: Pyralidae) became the focus of research to identify microorganisms with potential for biological control. Among the organisms first reported pathogenic to NOW were several *Bacillus* spp. a species of *Rickettsiella*, a number of microsporidians and two non occluded viruses. In the 1990's a baculovirus (AfMNPV) isolated from the celery looper *Anagrapha falcifera* (Lepidoptera: Noctuidae) was shown to infect NOW larvae. While purifying AfMNPV we isolated a Cypovirus (CPV) contaminant that probably originated from an infected cabbage looper (*Trichoplusia ni*. Hübner) colony used to propagate AfMNPV.

We purified and tested different concentrations of CPV occlusion bodies (OB) against NOW larvae. Based on the mortality, pupal weight and electron microscopy NOW larvae (1440 neonates) were not susceptible to concentrations of OBs ranging from 1.2 to  $1.2 \times 10^5$  per  $\text{mm}^2$ . However, CPV *in vitro* infection of NOW pupal ovary cell lines was successful. Hoffmann and Kellen (1990) reported on the establishment of two cell lines, AT10 and AT20, from pupal ovaries of NOW. TN 368 from the cabbage looper and, AT10 and AT20 cell lines were challenged with CPV virions. Based on  $\text{TCD}_{50}$ s TN368 was least permissive and AT10 most permissive. Further studies showed peak OB production of AT10 cells to be 12 days post infection. Although large numbers of OBs were in some cells, average OB production was  $<2.5/\text{cell}$ . The studies confirmed *T. ni* larvae as a CPV host. Interestingly this CPV replicates and produces higher titres in the NOW cell lines compared with the TN 368 cell line. These studies also indicate that levels of replication are not necessarily associated with the species of origin of the cell line.