A new baculovirus isolate that doesn't cause the liquefaction of the integument in *Spodoptera frugiperda* dead larvae

FERNANDO H. VALICENTE[1], CORINA V. MACEDO[2] AND JOSÉ L. C. WOLFF[3]
[1]*Embrapa Maize and Sorghum Research Center. C.P. 151, 35701-970, Sete Lagoas, MG, Brazil. Phone: 55 31 3779 1184, fax: 55 31 3779 1179, email: valicent@cnpms.embrapa.br*
[2]*Graduate student at UMC, Mogi das Cruzes, SP, Brasil.*
[3]*- Molecular Biology Professor*

Introduction: The *Spodoptera fruigiperda* nucleopolyhedrovirus (SfMNPV) can be very effective in controlling *S. frugiperda*, and has shown potential to be used in Brazil as a biopesticide. However, an important difficulty results from the disruption of the larvae integument due to SfMNPV infection (isolate 19). The liquefaction of the integument makes large scale production laborious because all larvae must be frozen before being harvested for polyhedra extraction.
Methods: One dead larva was found not disrupting the integument (isolate 6) and was multiplied during 5 generations in laboratory. Detection and sequencing of chitinase and cathepsin genes were performed as well as PIB production comparing the two isolates.
Results: The new Brazilian isolate 6 of *S. frugiperda* that doesn't disrupt the integument was confirmed to harbour cathepsin and chitinase genes. Restriction fragment analysis with *Bam*HI and *Hind*III did not show differences between isolate 19 and 6. PCR amplification of the regions encompassing the chitinase and the cathepsin genes produced an amplicon whose size was the same for the two isolates. Alignment of the sequence (isolate 6) obtained with the sequence of isolate 19 revealed a deletion of one base located within the chitinase gene. The framesift caused by this deletion resulted in appearance of a stop codon 15 base pairs downstream the mutation.
Conclusions: Isolate 6 proved to be very efficient to be used in a large scale baculovirus production. Using this isolate, the larval equivalent/ha could be lowered to 80 to 120 larvae/ha, which is equivalent to 10.75 and 13.86 g/ha, respectively
ORAL SUBMISSION