

## STUDY OF THE EXPRESSION OF ANK1, AN IKB-LIKE GENE FROM *TOXONEURON NIGRICEPS* BRACOVIRUS IN TOBACCO PLANTS

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Wasp parasitoids have developed a wide range of host colonization strategies, all resulting in severe pathological syndromes in the parasitized hosts. The involvement of a complex array of physiological and molecular mechanisms in host-parasitoid associations offers interesting candidates, as new perspectives, for sources of genes with potential applications for plant pest control. *Toxoneuron nigriceps* is an endophagous parasitoid of tobacco budworm *Heliothis virescens*. This hymenopteran wasp is associated with a polydnavirus, *Toxoneuron nigriceps* Bracovirus (TnBV), that is injected in the host at the time of oviposition. It plays a key role in the disruption of the host immune reaction of parasitized larvae. The expression of the ankyrin gene (*Ank1*) appears to be directly involved in the suppression of the host immune response by interfering with the TNF/Toll pathway. The ANK1 protein has significant homology to insect and mammal Ikb proteins, molecules characterized by the presence of an ankyrin domain involved in protein-protein interactions. Plants also have similar genes that appear to be involved in the plant response to pathogen attack. In order to study the role of such genes in plant defence, *Nicotiana tabacum* was constitutively transformed with a TnBV *Ank1* gene fused to a sequence encoding for a myc peptide. Transformed plants were characterized by PCR and RT-PCR. Western analysis demonstrated a complex hybridization profile, with numerous bands of high molecular mass in addition to the expected band of 25 kDa, suggesting interactions among ANK1 and other cytoplasmic proteins.

Transgenic plants are presently being analysed in bioassays with the plant pathogen *Botrytis cinerea* and lepidoptera larvae. Moreover, microarray experiments are in progress on the same plants to assess transcriptomic modifications of defence proteins during pathogen interactions.