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Poster Abstract – C.06

STUDY OF THE EFFECTS OF THE EXPRESSION OF A VIRAL Ik-B LIKE PROTEIN ON TOBACCO DEFENSE

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IkB, Nicotiana tabacum, plant defense, PR1

NF-kB is involved in the regulation of several stress related cellular activities (Hoffmann, 2003; *Nature:* 426, 33). NF-kB dimers are sequestered into the cytosol of unstressed cells through non-covalent interactions with a class of inhibitor proteins, called IkBs.

All members of IkB family have ankyrin repeats, which bind to NF- kB/Rel proteins and mask their nuclear localisation signal. The IkB-NFkB like pathway is conserved in plants where it is implicated in the defence response induced by pathogen infections (Kuhlmann M. *et al.,* 2003; *J Biol Chem:* 278, 8786). In order to study the impact of such a gene of plant defence we expressed in tobacco an Ikb- like gene, *Tn*BV*ank1, isolated from* a polydnavirus associated with *Toxoneuron nigriceps,* an endophagous parasitoid of larval stages of the tobacco budworm *Heliothis virescens* (Falabella P. *et al*., 2007; *J Gen Virol* : 88, 92).

We have characterized transgenic plants by RT-PCR and western blotting which confirmed the expression of the recombinant protein often complexed with other proteins in interactions probably mediated by the ankyrin domains. Transgenic protoplast were used to immunolocalize the recombinant protein which appeared to be essentially linked to cellular membranes.

In order to evaluate the ability of transgenic plants to modify the expression of defensive genes, transformants were challenged with a fungal elicitor and analyzed for the expression of biotic stress related genes by microarray approach. A significant alteration of PR1 gene expression profile, confirmed by a quantitative Real Time PCR, was observed. These results suggest that the constitutive expression of the TnBVank1 gene is associated with a modification of the tight control of the NfKB-like of tobacco plants.