Proceedings of the 50th Italian Society of Agricultural Genetics Annual Congress
Ischia, Italy – 10/14 September, 2006
ISBN **88-900622-7-4**

Poster Abstract – C.47

EXPRESSION IN TOBACCO OF A PROTEIN TYROSINE PHOSPHATASE GENE ISOLATED FROM THE POLYDNAVIRUSES OF THE PARASITOID *TOXONEURON NIGRICEPS*

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viral gene, plant biotechnology, insect, parasitoid, resistance

Protein Tyrosine Phosphatases (PTP) play a central role in the control of cellular mechanisms through a wide range of signalling processes, including those for pathogen and stress responses and development. The PTP7 gene from the polyDNAviruses of the parasitoid *Toxoneuron nigriceps* (Hymenoptera, Braconidae) is probably involved in the underphosphorylation of regulatory proteins of the prothoracicotropic hormone signal transduction pathway, leading to a translational block of host protein synthesis. Among the PTPs present in the plant kingdom, PTP7 shows a 31% similarity with the AtPTP1, the first plant *bona fide* tyrosine phosphatase characterized in *Arabidopsis thaliana.*

Here we report the expression of this gene in tobacco aimed to evaluate its potential utility for crop protection and investigate a possible role in *planta*. To this aim, the PTP7 viral gene, in frame to a sequence coding for a myc peptide, was fused to two signal peptides: the first one, located at the N-terminus of the recombinant protein, originated from tobacco pathogenesis-related protein-1; the second one is the KDEL sequence and is located at the C-terminus. These signal peptides should ensure an efficient translation while minimising the risk of putative detrimental effect for plants.

Constructs, before stable plant transformation, were validated by a transient expression assay, which indicated that tobacco plants produce an immunoreactive protein of the expected molecular weight (35 kDa). Stable transformation of tobacco originated plants with some phenotypic abnormalities. The PTP7 expressing lines have longer internodes, paler leaves and flower early compared to control plants, suggesting that the PTP7 expression affect the plant physiology. Bioassays with transgenic plants against Lepidoptera larvae are presently under progress.