

## **STUDY OF ANTIBODY-MEDIATED RESISTANCE IN PLANT THROUGH A PROTEOMIC APPROACH**

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In this work we investigated whether the expression in plant of protective recombinant antibodies may alter the physiological expression pattern of proteins. The insertion of exogenous genes in plant genome encoding for proteins able to confer resistance to pathogens might lead to the production of undesired compounds, suppression of endogenous genes expression or structural and biological modifications of the product of interest (i.e. different folding or post-translation modification, protein complexes formation, protein degradation).

Hereby we analyzed different transgenic plants (*Lycopersicon esculentum* cv. MicroTom, *Nicotiana benthamiana*) expressing two recombinant antibodies against independent plant viruses (cucumber mosaic virus and tomato spotted wilt virus). The aim of this study is both to investigate the ‘substantial equivalence’ between transgenic and unmodified genetic background and to validate the use of recombinant antibody for plant protection in the respect of the natural expression pattern.

Proteomes of either healthy or infected plants are being analyzed by two-dimensional electrophoresis using Differential In-Gel Electrophoresis (DIGE) technology. Differential protein expression is under investigation using “Decyder” software (GE Healthcare Biosciences).

The comparison between the foreign traits introgressed in a genetic background and the corresponding starting genetic material will be contribute either to biosafety issues or to the knowledge of the molecular mechanism of plant-pathogen interaction.