AN INTEGRATED TRANSCRIPTION PROFILING TO INVESTIGATE THE RESPONSE TO RALSTONIA SOLANACEARUM IN POTATO

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**Ralstonia solanacearum** is a widely spread pathogen that causes severe damage to many cultivated species, including potato. No chemicals is active against this bacterium, therefore the selection of resistant varieties is the most reliable tool for disease control. Therefore, in order to identify genes expressed during this plant-pathogen interaction, two different transcriptomic approaches were used.

A cDNA-AFLP-TP analysis was carried out on the resistant *Solanum commersonii* and the susceptible *S. tuberosum* cv. Blondy. Various primer combinations were tested on RNA extracted from these genotypes at different times after inoculation. Up till now, out of 335 differentially expressed ESTs, around 70 were sequenced and selected for further analyses. In particular, one EST specifically expressed in the resistant genotype after the infection corresponded to part of a gene controlling the synthesis of an ABC transporter protein. This result will be further investigated since this type of protein has been hypothesized to play a role in protecting plants against pathogen attacks. Furthermore, the study of other ESTs is being aided by their alignment with BACs already sequenced in the framework of the International Tomato Sequencing Initiative.

In addition, a Combimatrix 4x2k array was synthesized using a tomato EST collection available in GenBank and obtained from a PCR select experiment performed on the resistant cv. Hawaii 7996. The array slide, synthesized at the University of Verona, includes 4 subchip each one harboring probes designed to match specifically 658 transcripts. Probes are replicated 3 times within each subchip. This array is being hybridized with RNA extracted from the same potato genotypes used for the cDNA-AFLP analysis. Selected sequences obtained from both transcriptomic profiles will be validated by the qPCR real time, in order to identify those ESTs potentially involved in the resistant response to *R. solanacearum*. 