

PROTEOMIC ANALYSIS OF TOMATO PLANTS SUBMITTED TO ABIOTIC
ELICITORS OF RESISTANCE: ACTIVITY OF ENZYMES INDICATING THE
STATE OF INDUCTION

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Proteomic analysis of tomato plants submitted to wounds intends to search for proteins involved in plant defense, in order to detect molecules involved in important pathways of plant resistance. Tomato plants (Santa Cruz Kada, 28-days of age) were submitted to wounds in all expanded leaves, by means of a plier, adapted to accomplish circular crushes (0.5-cm diameter), under greenhouse conditions. To confirm the induction of resistance by the wounds, enzymes involved in this effect were evaluated. Leaves were harvested at 0, 1, 2, and 7-days, frozen in liquid nitrogen and maintained at -80°C. Extraction procedure consisted of leaf maceration in Tris-HCl 50mM, pH 7, added of PVPP, PMSF and benzamidine, following centrifugation (20,000g, 4°C, 25min). Activities of lipoxygenases, peroxidases, beta-1,3-glucanase, quitinase and phenylalanine ammonia-lyase were evaluated in all recovered supernatants and results indicated increase in the activity of lipoxygenase (3.71 times) and peroxidase (7.28 times) to the 7 and 2-days after treatment, respectively. As those proteins are involved in pathway metabolic indicative of the state of resistance induction in plants, probably the induction of synthesis of proteins or peptides with antimicrobial activity would be occurring. Additional experiments with base in proteomics analysis are been developed for purify and characterize proteins with potential microbicide or microbiostatic with the objective of developing commercial defense products.