P21 - DETERMINATION OF SHIKIMIC, JASMONIC AND SALYCILIC ACIDS IN WILD AND OGM NICOTIANA LANGSDORFII PLANTS EXPOSED TO CHEMICAL AND WATER STRESSES

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The metabolic diversity in plants represents areservoir of diverse functions; when the environment is adverse and plant growth is affected, metabolism is profoundly involved in signaling, physiological regulation, and defense responses. At the same time abiotic stresses affect the biosynthesis, concentration and storage of primary and secondary metabolites [1,2]. The activation and regulation of the complex system of stress response rely on the kind and duration of stress and to the plant genotype and developmental stage. Changes in the genetic profile of a plant can significantly affect the hormonal pattern and the physiological response to abiotic stresses [3].The plant response results from multiple phytohormonesactivity; as a consequence, interest has addressed to multiple phytohormones analysis [4].In order to verify the different metabolic response to chemical (Cr and Cd exposition) and hydric stresses, the gene rolD was introduced in *NicotianaLangsdorfii*plants. An HPLC/ESI(-)-LTQ Orbitrap method was developed to simultaneously quantify Shikimic, Jasmonic and Salycilic acid, phytohormones involved in plants' development and stress response .The cromatographical method allows the separation of these compounds in 8 minutes by using a RP-C18 column, eluted with Acetic acid 0.01% and Methanol. The high resolution MS analysis permitted the detection with high selectivity in Full scan mode. Labeled internal standards were used to quantify the phytohormones by isotopic dilution and the results were corrected by evaluating instrumental response factor. The method was validated evaluating precision, accuracy and recovery. Matrix effects were also considered. The method was applied to a few samples of wild and OGM NicotianaLangsdorfii to assess the variation of the metabolites profile in different stresses conditions.

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