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ANALYSIS OF S-NITROSYLATED PROTEINS *IN ARABIDOPSIS THALIANA* LEAVES SUBJECTED TO OXIDATIVE STRESS OR WOUNDING

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Oxidative burst, is defined as a rapid, transient production of high levels of reactive oxygen species (ROS) in response to different external stimuli. Plants produce ROS in response to biotic and abiotic stress, in chloroplasts, mitochondria and peroxisomes. Recent data indicates that oxidative stress occurs when ROS are produced more than they are metabolised in the cell, a condition common in plants exposed to various kinds of stress (heat, water, light, ozone, heavy metals, pathogens or elicitors). ROS not only cause oxidative damage, but are also involved in signaling. Controlling the concentration of ROS is important for the survival of the plant itself, and Nitric oxide (NO) seems to have a pivotal role in protecting cells from oxidative damage. NO is involved both in the control of the redox status of the cell, regulating the concentration of ROS, as well as in response signaling, to modulate cell physiological and pathophysiological processes. NO signaling involves direct post-translational modifications (PTM) of protein targets, which results in the formation of nitrosothiol adducts from the thiol group of target cysteines. In this study the effect on protein S-nitrosylation pattern in *Arabidopsis* leaves treated with Paraquat (methyl viologen) or subjected to mechanical injury (wounding) has been investigated. Paraquat is a redox-reactive compound that generates superoxide anions in chloroplast and is widely used to mimic oxidative stress in plants, whereas mechanical injury is a component of biotic stress induced by insect attack. The involvement of protein nitrosylation in the plant response to wounding is poorly investigated. Proteins have been extracted from control and treated leaves, subjected to biotin switch, separated by two-dimensional gel electrophoresis (2-DE), blotted and decorated with an anti-biotin probe, and identified by mass spectrometry.