



# ABSTRACTS

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## P-2-043

**Consequences of enhanced chloroplast SOD activity on the acclimation of leaves to supplemental UV-B**

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Reactive oxygen species (ROS), including superoxide anions are generated through normal biochemical processes, but their production is increased by a variety of stress conditions. Plastid transformant tobacco plants expressing a *Nicotiana* mitochondrial superoxide dismutase (MnSOD) gene were shown to be more tolerant to stress by a single high dose of ultraviolet radiation irradiation than wild type (Poage M, Le Martret B, Jansen MA., Nugent GD, Dix PJ 2011 Plant Mol Biol 76:371-384).

While high fluxes of ROS are known to promote oxidative stress, lower and controlled amounts of ROS (for example of hydrogen peroxide) were shown to participate in activating defensive mechanisms. In the present study we tested the acclimation of the above MnSOD enhanced plastid transformants to low UV-B doses, which were applied in a 5-days treatment supplementing growth light. Our results suggest that enhanced plastid superoxide production in the transplastomic plants was not advantageous and rather hindered acclimation. In addition to supporting models on the dual role of ROS, our observations also add to the distinct nature of responses to acute and chronic UV treatments on plants.

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