

## SALICYLIC ACID INDUCES NITRIC OXIDE SYNTHESIS IN ARABIDOPSIS

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The relationship between nitric oxide (NO) and salicylic acid (SA) was investigated in *Arabidopsis thaliana*. NO production was detected through a spectrofluorimetric assay and confocal microscopic analysis of cell cultures and plant roots. Here we have reported that increasing concentrations of SA induced NO synthesis in a dose dependent manner. Genetic and pharmacological approaches allowed the identification of the metabolic pathways involved in SA-induced NO synthesis. Analysis the of *nial1, nia2* mutant, which is defective in nitrate reductase (NR) activity, showed that this metabolic pathway was not involved since SA was still able to induce NO synthesis in mutant roots. Successively, the role of NOS-like activities was investigated by studying the *Atnos1* mutant in the presence of NOS inhibitors. Forty percent of NO production was due to ATNOS1, while the majority of the remaining NO was attributable to unidentified NOS activity. In addition, components of the SA signaling pathways giving rise to NO production were identified and both calcium and protein phosphorylation were involved. In fact, in the presence of either a calcium chelating agent or a specific inhibitor of a casein kinase, SA-induced NO production was prevented.