

## Salt stress disturbs nitric oxide signaling of maize roots by inhibiting the nitrate reductase activity

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Nitric oxide (NO) has multiple roles in plant physiology, also mediating responses to abiotic stresses such as salinity. Nitrate reductase (NR) was the first enzyme to be described as responsible by NO production in plants. In this work two week-old maize seedlings were exposed to salt stress and also treated with NO donors and scavengers for 24h. Nitrate reductase activity of roots was determined *in vivo* by Jaworski's method. Endogenous NO was detected in root sections by using the specific probe 4,5- diaminofluorescein diacetate (DAF-2 DA). The NR activity was stimulated by 200  $\mu$ M of both NO donors SNP or GSNO, but GSNO was more effective in promote the NR activation, and their effects were abolished by the NO scavenger PTIO. Sodium tungstate ( $\text{Na}_2\text{WO}_4$ ), a NR inhibitor, reduced the NR activity to the same extent as did NaCl 150 mM. The DAF-2 DA fluorescence was enhanced by either SNP or GSNO, and quenched by PTIO and  $\text{Na}_2\text{WO}_4$  as well as upon salt stress. Taken together, the data suggest that at least part of the deleterious effects promoted by salt stress in maize is related to the disruption of NO production via NR and the consequent disturbance of the NO signaling of the root development.

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