



BOOK of **ABSTRACTS**

4th INTERNATIONAL CONFERENCE ON PLANT BIOLOGY (23rd SPPS Meeting)



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The effect of sodium nitroprusside on antioxidative enzymes activity of centaury (*Centaureum erythraea* Rafn) under stress conditions caused by sodium chloride *in vitro*

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Common centaury (*Centaureum erythraea* Rafn) is a medicinal plant used in traditional medicine since ancient times. Centaury inhabits dry pastures, roadsides and fields from lowlands to mountain vegetation. Considering that centaury can also be found on moderately saline habitats in nature, it was interesting to investigate the effect of exogenously applied sodium nitroprusside (SNP), as a donor of nitrogen monoxide (NO), on antioxidative enzymes activity of centaury shoots grown under stress caused by sodium chloride (NaCl) *in vitro*. Centaury shoots were grown on ½MS nutrient media containing graded concentrations of SNP (0, 50, 100 and 250 µM). After three weeks of pretreatment, shoots were further transferred to ½MS nutrient media supplemented with NaCl (0 or 150 mM) and/or SNP (0, 50, 100 or 250 µM) during one week treatment. After four weeks, the activity of antioxidant enzymes such as superoxide dismutase (SOD), catalase (CAT) and peroxidase (POX) was determined spectrophotometrically. Thus, through 14 different treatments, the effect of NaCl and SNP on biochemical response of centaury shoots was investigated. The results obtained in this work showed that NaCl decreased the activity of SOD, CAT and POX. On the other hand, exogenous application of SNP increased SOD, CAT and POX activity in centaury shoots after four weeks. It can be concluded that the effect of SNP on increased tolerance of centaury shoots to salinity is reflected through the changed activity of enzymatic components of antioxidant defence.

Keywords: centaury, reactive oxygen species, nitric oxide, salinity

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