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Jaroslav Briančin, Assylay Kurmanbayeva, Moshe Sagi



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**Zinc oxide nanoparticles phytotoxicity on halophyte from genus *Salicornia***

Ludmila Balážová<sup>1,2\*</sup>, Petr Babula<sup>1,3</sup>, Matej Baláž<sup>4</sup>, Miriam Bačkorová<sup>2</sup>, Zdenka Bujňáková<sup>4</sup>, Jaroslav Briančin<sup>4</sup>, Assylay Kurmanbayeva<sup>5</sup>, Moshe Sagi<sup>5</sup>

<sup>1</sup>*Department of Natural Drugs, Faculty of Pharmacy, University of Veterinary and Pharmaceutical Sciences Brno, Palackého 1/3, CZ-61242 Brno, Czech Republic.*

<sup>2</sup>*Department of Pharmacognosy and Botany, University of Veterinary Medicine and Pharmacy in Košice, Komenského 73, 041 81 Košice, Slovakia*

<sup>3</sup>*Department of Physiology, Faculty of Medicine, Masaryk University, Brno, Czech Republic, CZ-625 00, Czech Republic*

<sup>4</sup>*Department of Mechanochemistry, Institute of Geotechnics, Slovak Academy of Sciences, Watsonova 45, 040 01 Košice, Slovakia*

<sup>5</sup>*Plant Stress Laboratory, French Associates Institute for Agriculture and Biotechnology of Drylands, Blaustein Institutes for Desert Research, Ben-Gurion University of the Negev, Sede Boqer Campus 84990, Israel*

\*corresponding author. Tel. +421 907536280

Email address: ludmila.balazova@uvlf.sk

**Abstract**

This study deals with the effect of zinc oxide nanoparticles on halophyte from the genus *Salicornia*. The presence of ZnO nanoparticles (100 and 1000 mg/L) in the solid culture medium resulted in the negative effects on plant growth in the concentration-dependent manner. The shoot length of plant cultivated with 1000 mg/L ZnO NPs decreased by more than 50 % compared to non-treated plants. The phytotoxicity was associated with the release of free zinc(II) ions, which was determined by atomic absorption spectroscopy and fluorescence microscopy. Another mechanism involved in ZnO NPs phytotoxicity was closely connected with generation of reactive oxygen species, which was accompanied by changes in activities and amounts of antioxidant enzymes. Histochemical evaluation showed that ROS were presented also in the shoot of plant, which was not in direct contact with NPs. The

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