

SUPPLEMENTARY MATERIALS

Tolerance of facultative metallophyte *Carlina acaulis* to cadmium relies on chelating and antioxidative metabolites

**Sławomir Dresler ^{1*}, Maciej Strzemski ², Jozef Kováčik ³, Jan Sawicki ², Michał Staniak ²,
Magdalena Wójciak ², Ireneusz Sowa ², Barbara Hawrylak-Nowak ⁴**

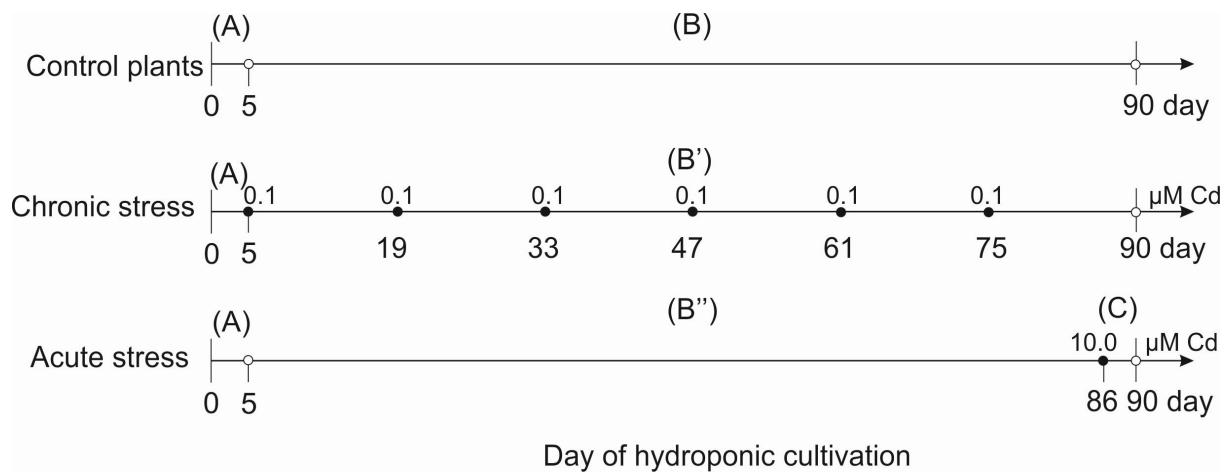
¹ Department of Plant Physiology and Biophysics, Institute of Biological Science, Maria Curie-Skłodowska University, Akademicka 19, 20-033 Lublin, Poland; slawomir.dresler@poczta.umcs.lublin.pl

² Department of Analytical Chemistry, Medical University of Lublin, Chodźki 4a, 20-093, Lublin, Poland; maciej.strzemski@poczta.onet.pl (M.S.); jan.sawicki@mgr.farm (J.S.); michal_staniak@wp.pl (M.S.); kosiorma@wp.pl (M.W.-K.); i.sowa@umlub.pl (I.S.);

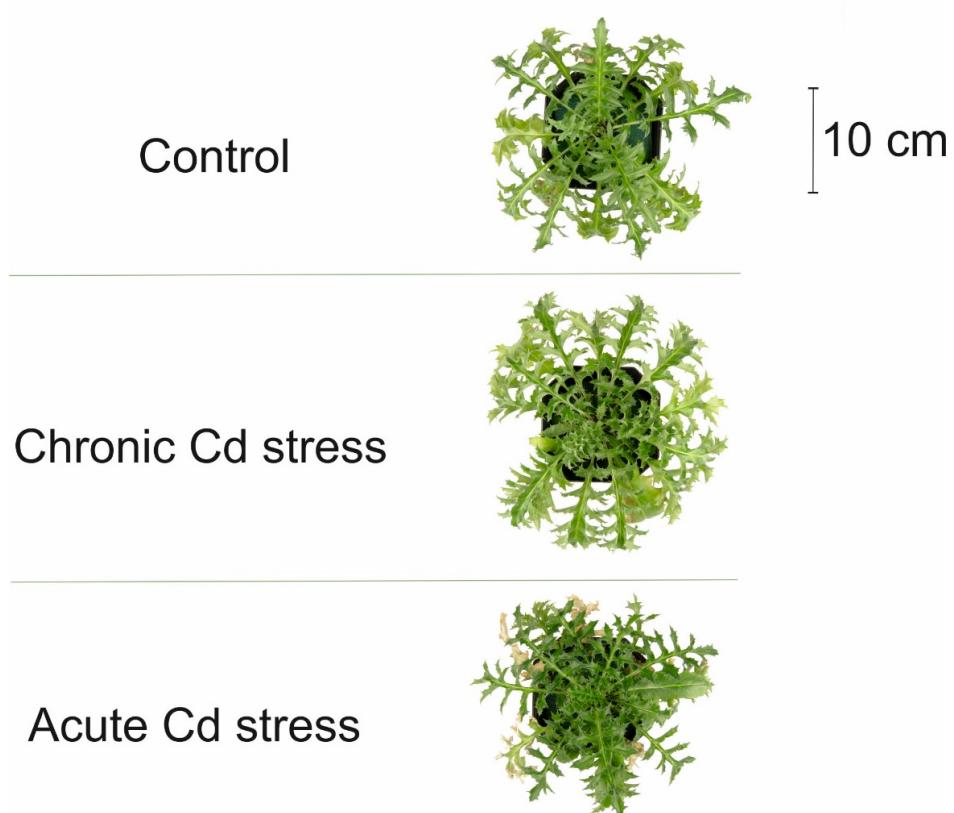
³ Department of Biology, University of Trnava, Priemyselná 4, 918 43 Trnava, Slovak Republic; jozkovalcik@yahoo.com

⁴ Department of Botany and Plant Physiology, University of Life Sciences in Lublin, Akademicka 15, 20-950 Lublin, Poland; barbara.nowak@up.lublin.pl

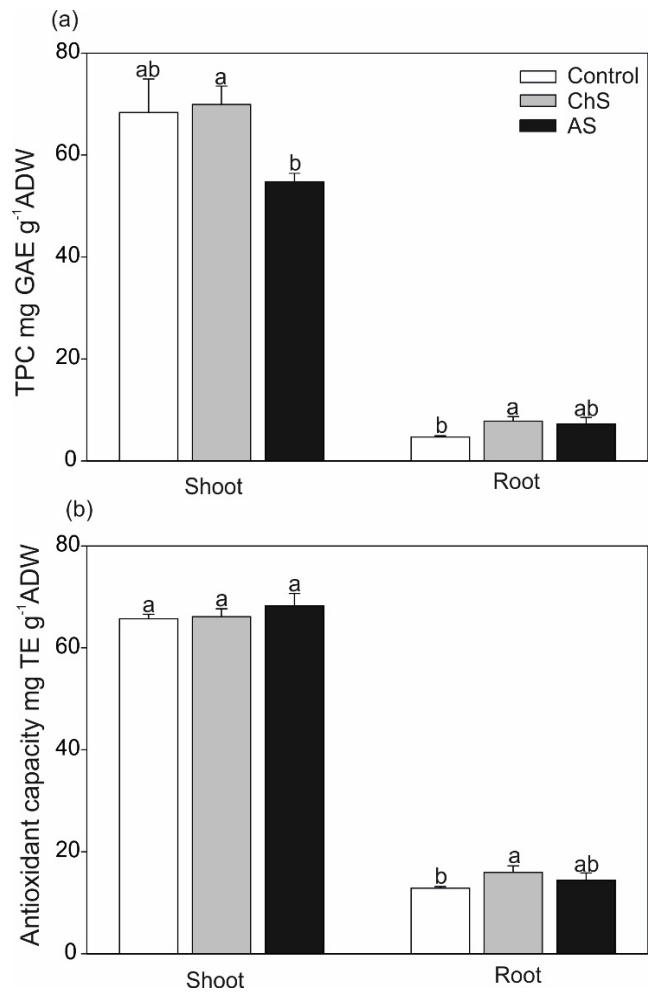
*Correspondence: slawomir.dresler@poczta.umcs.lublin.pl Tel.:+48-81-537-5078



Suppl. Fig. S1. Diagram of the experimental design: (A) 5 days of acclimation to hydroponics; (B) 85 days of cultivation in control conditions; (B') 85 days of cultivation with 0.1 μM Cd = chronic stress; (B'') 81 days of cultivation without Cd, followed by (C) 4 days of cultivation with 10 μM Cd = acute stress. Total cultivation in hydroponics was 90 days in all treatments. Numbers below axis indicate days when culture solutions were renewed.



Suppl. Fig. S2. Phenotype of *Carlina acaulis* plants at the end of the treatments with various Cd doses and exposure time.



Suppl. Fig. S3. Effect of long-term chronic cadmium stress (ChS, 0.1 µM Cd, 85 days) or short-term acute cadmium stress (AS, 10 µM Cd, 4 days) on: (a) total phenolic content (TPC) and (b) antioxidant capacity in the shoots and roots of *C. acaulis*. Data are means ± SE (n=5); values followed by the same letter are not significantly different (p < 0.05, Tukey's test).

Suppl. Table S1. Translocation factors of Cd in plants exposed to long-term chronic cadmium stress (ChS, 0.1 µM Cd, 85 days) or short-term acute cadmium stress (AS, 10 µM Cd, 4 days).

	Leaf/Root	Trichome/Leaf	Trichome/Root
ChS	0.215	0.715	0.150
AS	0.061	1.457	0.088