

Prof. Željka Vidaković-Cifrek, PhD

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Curriculum Vitae

Position title: Full professor at the Faculty of Science, University of Zagreb

Education:

1999 PhD in Natural Sciences (Biology);
1993 MSc in Natural Sciences (Biology; Molecular and Cell Biology);
1985-1990 study of Biology, BSc (Molecular Biology);
-all degrees received from the Faculty of Science, University of Zagreb

Employment:

1990 - present - Faculty of Science, University of Zagreb (Department of Biology)
2021- present – Full Professor;
2013-2021 - Associate Professor;
2004-2013 - Assistant Professor;
2000-2004 - Senior Research Assistant;
1995–1999 - Research Assistant;
1990-1995 - Junior Researcher

Teaching activities:

Faculty of Science, University of Zagreb (Department of Biology)

Undergraduate study programme:

Plant Physiology (Ž. Vidaković-Cifrek); Plant Metabolism under Stressful Conditions (Ž. Vidaković-Cifrek, M. Tkalec); Bioassays (M. Pavlica, G. Klobučar, Ž. Vidaković-Cifrek); Laboratory Skill Training

Graduate study programme:

Regulatory Mechanisms of Photosynthesis (Ž. Vidaković-Cifrek, M. Tkalec, P. Peharec Štefanić); Stress Physiology and Defense Mechanisms of Plants (Ž. Vidaković-Cifrek, M. Tkalec); Experimental Plant Physiology in Teaching (Ž. Vidaković-Cifrek, M. Tkalec, S. Radić Brkanac); Laboratory Skill Training

Doctoral programme:

Interactions of Plants and the Environment (M. Tkalec, Ž. Vidaković-Cifrek); Mechanisms of Plant Responses to Stress (S. Radić Brkanac, Ž. Vidaković-Cifrek)

Research Grant Participation:

Research projects funded by the Croatian Science Foundation:

December 2023- present “Alternative splicing of BPM2 as a mechanism for establishing a functional diversity of MATH-BTB protein family in Arabidopsis thaliana” (spliceFun); leader: Prof. Nataša Bauer

May 2021 - November 2023 – “Transport, fate and toxicity of metal(loid)s released from industrial waste deposits” (FORTIS); leader: Željka Fiket, PhD

March 2017 - February 2021. – “MATH-BTB proteins as switches between transcription and RNA-directed DNA methylation during plant development” (PhytoMetDev); leader: Prof. Dunja Leljak-Levanić

Research projects granted by the Ministry of Science, Education and Youth of the Republic of Croatia:

2007-2013 researcher on the project "Molecular responses of Croatian endemic and rare plant species to stress" (leader: Branka Pevalek-Kozlina)

2007-2013 researcher on the project "Organization and function of plant cells and tissues upon the oxidative stress" (leader: Hrvoje Lepeduš)

2002-2006 researcher on the project "Stress condition effect on Croatian endemic and endangered plant species" (leader: Branka Pevalek-Kozlina)

1998-2001 leader of the project for young researchers "Evaluation of oil industry waste waters and chemicals' toxicity by plant test systems"

1996-2002 researcher on the project "Effects of chemicals on physiological processes in plants" (leader: Ivan Regula)

1992-1996 junior researcher on the project "Investigation of some plant hormones in plant development" (leader: Ivan Regula);

Other projects:

2021 leader of the project „Phenotyping of BPM1-mediated heat stress response in *Arabidopsis thaliana*“ (PhenoArHeat) - European Plant Phenotyping Network (EPPN)

1999 cooperation with the University of Cologne, Germany (Botanisches Institut, Universität zu Köln) Verification of xenobiotica removal from contaminated water by constructed wetlands with Lemna test (in the scope of the international project INCO-DC, 1994-1999).

Field of scientific research: plant physiology, plant stress physiology and plant bioassays; mostly focused on physiological and biochemical changes in plants under stressful environmental conditions and application of plant bioassays as a tool for evaluation of effect of environmental changes and pollution on plants

List of publications:

Vidaković-Cifrek, Ž., Tkalec, M., Bakran-Petricioli, T., Dolenc Koce, J., Bobetić, J., Cvrtila, A., Grbčić, A., Maroević, J., Mikec, N., Samac, J., Smiljanec, M. 2024. Standard descriptors and selected biomarkers in assessment of *Posidonia oceanica* (L.) Delile environmental response. Journal of Marine Science and Engineering, 12, 2072.

Vuković, M., Kutnjak, M., Vitko, S., Tkalec, M., Vidaković-Cifrek, Ž. 2024. Heat priming modifies heat stress response in *BPM1*-overexpressing *Arabidopsis thaliana* (L.) Heynh. Journal of Plant Growth Regulation. <https://doi.org/10.1007/s00344-024-11337-4>

Šutevski, I., Krmpotić, K., Vitko, S., Bauer, N., Fancev, E., Cifrek, M., Vidaković-Cifrek, Ž. 2022. Biochemical and physiological responses of *Arabidopsis thaliana* leaves to moderate mechanical stimulation. Phytion - International Journal of Experimental Botany 92(3), 901-920.

Vitko, S., Bauer, N., Leljak-Levanić, D., Vidaković-Cifrek, Ž. 2022. Effect of moderate heat stress on *Arabidopsis thaliana* with modified *BPMs* expression. Acta Botanica Croatica, 81(2), 140-148.

Lepeduš, H., Vidaković-Cifrek, Ž., Šebalj, I., Antunović Dunić, J., Cesar, V. 2020. Effects of low and high irradiation levels on growth and PSII efficiency in *Lemna minor* L. Acta Botanica Croatica 79(2), 185-192.

Fiket, Ž., Medunić, G., Vidaković-Cifrek, Ž., Jezidžić, P., Cvjetko, P. 2020. Effect of coal mining activities and related industry on composition, cytotoxicity and genotoxicity of surrounding soils. Environmental Science and Pollution Research 27, 6613-6627.

Sviben, S., Matoničkin Kepčija, R., Vidaković-Cifrek, Ž., Sertić Perić, M., Kružić, P., Popijač, A., Primc, B. 2018. *Chara* spp. exhibit highly heterogeneous light adaptation, calcite encrustation and epiphyton patterns in a marl lake. Aquatic Botany 147, 1-10.

- Marček, T., Vidaković-Cifrek, Ž., Tkalec, M., Ježić, M., Čurković-Perica, M. 2017. Response of dihaploid tobacco roots to salt stress. *Acta Botanica Croatica* 76(1), 49-54.
- Marček, T., Tkalec, M., Vidaković-Cifrek, Ž., Ježić, M., Čurković-Perica, M. 2016. Expression of dehydrins, HSP70, Cu/Zn SOD, and RuBisCO in leaves of tobacco (*Nicotiana tabacum* L.) dihaploids under salt stress. *In Vitro Cellular & Developmental Biology - Plant* 52(3), 233-240.
- Bermanec, V., Vidaković-Cifrek, Ž.; Fiket, Ž.; Tkalec, M.; Kampačić, Š., Kniewald, G. 2016. Influence of digested wastewater sludge on early growth of the perennial ryegrass (*Lolium perenne* L.). *Environmental Earth Sciences* 75(1), 1-12.
- Zovko, M., Vidaković-Cifrek, Ž., Cvetković, Ž., Bošnjir, J., Šikić, S. 2015. Assessment of acrylamide toxicity using a battery of standardised bioassays. *Arhiv za higijenu rada i toksikologiju* 66, 315-321.
- Vidaković-Cifrek, Ž., Tkalec, M., Šikić, S., Tolić, S., Lepeduš, H., Pevalek-Kozlina, B. 2015. Growth and photosynthetic responses of *Lemna minor* L. exposed to cadmium in combination with zinc or copper. *Arhiv za higijenu rada i toksikologiju* 66, 141-152.
- Marček, T., Tkalec, M., Vidaković-Cifrek, Ž., Ježić, M., Čurković-Perica, M., 2014. Effect of NaCl stress on dihaploid tobacco lines tolerant to Potato virus Y. *Acta Physiologiae Plantarum* 36(7), 1739-1747.
- Vidaković-Cifrek, Ž., Sorić, S., Babić, M. 2013. Growth and photosynthesis of *Lemna minor* L. exposed to different light conditions and sucrose supplies. *Acta Botanica Croatica* 72(2), 211-219.
- Balen, B., Tkalec, M., Peharec Štefanić, P., Vidaković-Cifrek, Ž., Krsnik-Rasol, M. 2012. *In vitro* conditions affect photosynthetic performance and crassulacean acid metabolism in *Mammillaria gracilis* Pfeiff. tissues. *Acta Physiologiae Plantarum* 34, 1883-1893.
- Tkalec, M., Car, D., Gospočić, J., Križaić, I., Duž, K., Vidaković-Cifrek, Ž. 2012. Response of *Kalanchoe daigremontiana* on wounding and infection with *Agrobacterium tumefaciens*. *Periodicum biologorum* 114, 83-90.
- Balen, B., Tkalec, M., Šikić, S., Tolić, S., Cvjetko, P., Pavlica, M., Vidaković-Cifrek, Ž. 2011. Biochemical responses of *Lemna minor* experimentally exposed to cadmium and zinc. *Ecotoxicology* 20(4), 815-826.
- Ćuk, K., Gogala, M., Tkalec, M., Vidaković-Cifrek, Ž. 2010. Transgenerational stress memory in *Arabidopsis thaliana* (L.) Heynh.: antioxidative enzymes and HSP70. *Acta Botanica Croatica* 62(2), 183-197.
- Cvjetko, P., Tolić, S., Šikić, S., Balen, B., Tkalec, M., Vidaković-Cifrek, Ž., Pavlica, M. 2010. Effect of copper on the toxicity and genotoxicity of cadmium in duckweed (*Lemna minor* L.). *Arhiv za higijenu rada i toksikologiju* 61, 287-296.
- Tkalec, M., Malarić, K., Pavlica, M., Pevalek-Kozlina, B., Vidaković-Cifrek, Ž. 2009. Effects of radiofrequency electromagnetic fields on seed germination and root meristematic cells of *Allium cepa* L. *Mutation Research: Genetic Toxicology and Environmental Mutagenesis*, 672 (2), 76-81.
- Horvat, T., Vidaković-Cifrek, Ž., Oreščanin, V., Tkalec, M., Pevalek-Kozlina, B. 2007. Toxicity assessment of heavy metal mixtures by *Lemna minor* L. *Science of the Total Environment* 384, 229-238.
- Pavlič, Ž., Vidaković-Cifrek, Ž., Puntarić, D., 2005. Toxicity of surfactants to green microalgae *Pseudokirchneriella subcapitata* and *Scenedesmus subspicatus* and to marine diatoms *Phaeodactylum tricorneratum* and *Skeletonema costatum*. *Chemosphere* 61, 1061-1068.
- Radović, S., Vidaković-Cifrek, Ž., Tkalec, M., Krsnik-Rasol, M., Regula, I., 2005. Peroxidase and proteins as salinity stress indicators in duckweed exposed to oil industry high density brines. *Periodicum biologorum* 107, 33-38.
- Vidaković-Cifrek, Ž., Wonisch, A., Tausz, M., Grill, D. 2005. Effects of CaCl₂ and CaBr₂ on growth, photosynthetic pigments and ion accumulation in duckweed. *Phyton – Annales Rei Botanicae* 45, 183-196.

- Tkalec, M., Perinčić, Z., Vidaković-Cifrek, Ž., Pevalek-Kozlina, B., Regula, I., 2003. Physiological response of duckweed (*Lemna minor* L.) to herbicide norflurazon. *Periodicum biologorum* 105, 269-274.
- Vidaković-Cifrek, Ž., Pavlica, M., Regula, I., Papeš, D. 2002. Cytogenetic damage in shallot (*Allium cepa*) root meristems induced by oil industry "high density brines". *Archives of Environmental Contamination and Toxicology* 43, 284-291.
- Cheng, S., Vidaković-Cifrek, Ž., Grosse, W., Karrenbrock, F. 2002. Xenobiotics removal from polluted water by a multifunctional constructed wetland. *Chemosphere* 48, 415-418.
- Vidaković-Cifrek, Ž., Peškan, T., Žlender, S., Tkalec, M., Regula, I., 2001. Effect of calcium chloride and calcium bromide on chloroplasts of *Lemna minor* L. *Acta Botanica Croatica* 60, 245-252.
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- Vidaković-Cifrek, Ž., Jelenčić, B., Regula, I., 1997. Increasing of serotonin content in seeds of *Juglans nigra* L. and *Juglans cinerea* L. during ripening. *Periodicum biologorum* 99, 103-106.
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