

The Spiridion Brusina Medal for 2019 has been awarded to German plant biologist Professor Jutta Ludwig-Müller

Since 1997 the Croatian Society of Natural Sciences has acknowledged foreign scientists who have made substantial contributions to the Croatian natural science field by awarding the Spiridion Brusina Medal. Spiridion Brusina, a Croatian biologist and zoologist, was the founder of marine biology in Croatia and the first professor in the topic at the University of Zagreb. Renowned scientists from many countries and different life science fields over the world have been awarded this medal. Awardee for 2019 is Prof. Dr. Jutta Ludwig-Müller from the Faculty of Biology at Technische Universität Dresden, Germany, who is honored for her accomplishments in the field of plant biology and the promotion of Croatian science for the last 20 years.

Jutta Ludwig-Müller graduated in 1986 and obtained a PhD in 1990 in Plant Science at Goethe University, Frankfurt, Germany. She was habilitated in the field of botany in 1996 at the same university. Since 1999 she has been a professor at the Technische Universität Dresden, and since 2001 director of the Dresden Botany Institute. She is the editor-in-chief of the *Journal of Plant Growth Regulation* and is a member of the editorial boards of the *Journal of Botany*, *Plant Signaling & Behavior*, *Mutation Research*. She is a member of numerous scientific and professional societies, and leader of numerous projects in the field of plant biology and biotechnology. Professor Ludwig-Müller has extensive experience and expertise in plant physiology, molecular plant biology, as well as protein biochemistry and hormone determination. Her main research interest is the function and regulation of the activity of the plant hormone auxin by studying the synthesis and hydrolysis of conjugates, as well as the interaction with other plant hormones during plant growth and development. In addition, she investigates the role of auxin in the interactions of plants with pathogenic and beneficial microorganisms. Professor Ludwig-Müller intensively studies the disease of cabbages caused by the pathogen *Plasmodiophora brassicae*, which causes extensive damage within the Brassicaceae family. Working at physiological, biochemical and molecular levels, her aim is to discover possible defense mechanisms. Furthermore, her work addresses the possibility of the biocontrol of this important disease with endophytes. The scientific interests of Professor Ludwig-Müller are also focused on the response of plants to factors of abiotic stress with particular interest in the role of plant bioactive com-

pounds, in particular the plant hormone auxin and specialized metabolites.

For the last twenty years Professor Jutta Ludwig-Müller has been actively involved in cooperation with Croatian scientists from several institutions in Croatia: Faculty of Science, University of Zagreb, Ruđer Bošković Institute in Zagreb, and Josip Juraj Strossmayer University in Osijek. Ludwig-Müller is active as the head of numerous Croatian-German bilateral projects with colleagues from the Faculty of Science, as a manager of an Alexander von Humboldt Foundation project that was conducted with colleagues from the Ruđer Bošković Institute in Zagreb, and a collaborator on projects of the Croatian Science Foundation. Under the aegis of these collaborative ventures, 18 scientific papers were published in renowned journals and, at her initiative, an In memoriam dedicated to a long-time associate from Croatia, Dr. Volker Magnus. Within the framework of these projects, numerous associates from Croatia have advanced as PhD students, postdoctoral fellows and visiting scientists in the group of Professor Ludwig-Müller learning new modern methods in the field of plant molecular bi-



Fig. 1. Professor Jutta Ludwig-Müller presented her twenty years of collaboration with Croatian scientists by giving a lecture on “Control of the plant hormone auxin in different plant species and during the interaction of plants with their environment” at a mini-symposium of the Croatian Society of Plant Biologists, held in Zagreb on November 29 2019..



Fig. 2. Professor Zrinka Kovarik, the President of the Croatian Society of Natural Sciences, presenting the Spiridion Brusina Medal (A), and awarding the medal to Professor Jutta Ludwig-Müller (B).

ology and analytics. Within the Alexander von Humboldt project, valuable equipment was also purchased and used at the Rudjer Bošković Institute. She has been a member of the Rudjer Bošković Institute's International Scientific Council since 2011. She was the evaluator of the PhD thesis of Ivana Šola from Faculty of Science Zagreb: Molecular mechanisms of transport and biological function of phenolic derivatives in *Arabidopsis thaliana* (L.) Heynh. in 2013. She is an active peer reviewer of the journal *Acta Botanica Croatica*. She was a plenary lecturer at the Croatian Botanical Congress, Zagreb (2007) and an invited lecturer organized by the Croatian Society of Plant Biologists and the PhytoBraCro project of the Croatian Science Foundation (2018). In 2014 and 2015, she was the coordinator of the ERASMUS Biology Program at Technische Universität Dresden for universities in Zagreb and Split.

Thus, Professor Jutta Ludwig-Müller has made a significant contribution to the development of science in plant biology in Croatia, because through these collaborative efforts new topics have been opened up in Croatia in the field

of research into specialized metabolites and the role of the plant hormone auxin in abiotic and biotic stresses. Particularly useful are the training sessions of young scientists, doctoral students and postdoctoral students from Croatia in her group, which enable them access to modern analytical instrumentation and work in an international environment. Professor Jutta Ludwig-Müller supports the career development of young scientists from Croatia with letters of support when they are applying for scholarships and research projects. In view of the above, the members of the Croatian Society for Plant Biologists warmly recommended Professor Jutta Ludwig-Müller for the Spiridion Brusina Medal Award.

The award ceremony took place on 29th November 2019 in Zagreb at a mini-symposium of the Croatian Society of Plant Biologists. The medal was presented by the President of the Croatian Society of Natural Sciences Professor Zrinka Kovarik.

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Joint scientific publications by Professor Jutte Ludwig-Müller and Croatian scientists:

1. Smolko, A., **Ludwig-Müller, J.**, Salopek-Sondi, B., 2018: Auxin amidohydrolases – from structure to function: Revisited. *Croatica Chemica Acta* 91(2), 17.
2. Karačić, Z., Vukelić, B., Ho, G.H., Jozić, I., Sućec, I., Salopek-Sondi, B., Kozlović, M., Brenner, S.C., **Ludwig-Müller, J.**, Abramić, M., 2017: A novel plant enzyme with dual activity: an atypical Nudix hydrolase and a dipeptidyl peptidase III. *Biological Chemistry* 398, 101–112.
3. Smolko, A., Šupljika, F., Martinčić, J, Jajčanin-Jozic, N., Grabar-Branilović, M., Tomić, S., **Ludwig-Müller, J.**, Piantanida, I., Salopek-Sondi, B., 2016: The role of conserved Cys residues in *Brassica rapa* auxin amido-

hydrolase: the Cys139 is crucial for the enzyme activity and the Cys320 regulates enzyme stability. *Physical Chemistry Chemical Physic* 18, 8890–8900.

4. Lovelock, D.A., Šola, I., Marschollek, S., Donald, C. E., Rusak, G., van Pee, K.-H. **Ludwig-Müller, J.**, Cahill, D.M., 2016: Analysis of salicylic acid-dependent pathways in *Arabidopsis thaliana* following infection with *Plasmodiophora brassicae* and the influence of salicylic acid on disease. *Molecular Plant Pathology* 17, 1237–1251
5. Salopek-Sondi, B., Pollmann, S., Gruden, K., Oelmüller, R., **Ludwig-Müller, J.**, 2015: Improvement of root architecture under abiotic stress through control of auxin homeostasis in *Arabidopsis* and *Brassica* crops. *Journal of Endocytobiosis and Cell Research* 26, 100–111.

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8. Likić, S., Šola, I., **Ludwig-Müller, J.**, Rusak, G., 2014: Involvement of kaempferol in the defence response of virus infected *Arabidopsis thaliana*. *European Journal of Plant Pathology* 138(2), 257–271.
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