

## Elena Yaronskaya (10.05.1955–24.09.2011)

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Dr. Elena Yaronskaya (Fig. 1) unexpectedly passed away much too early on September 24th 2011. Elena was born in Magnitogorsk (former Soviet Union, now Russian Federation) on May 10th 1955.

Following biology studies, she graduated from the Department of Biology, Belorussian State University, Minsk, in 1977. Thereafter, she pursued post-graduate studies at the Institute of Bioorganic Chemistry of the Russian Academy of Sciences (Moscow), named after academicians M. M. Shemyakin and Yu. A. Ovchinnikov, for another 3 years. In 1983, she defended her doctoral (“kandidat nauk”) thesis concerning “Studies of lipid dependence of the microsomal pyrophosphatase” with excellent honors.

Returning to Minsk, she worked at the Institute of Photobiology (now: Institute of Biophysics and Cell Engineering) of the Academy of Sciences of Belarus, in the Laboratory of Biochemistry and Biophysics of the Photosynthetic Apparatus, headed by Professor Dr. Alexander Shlyk. She participated in studies concerning the use of the

chlorophyll biosynthetic system as a target for novel, photodynamic herbicides. Dr. Yaronskaya essentially contributed to studies of photophysical and photochemical mechanisms underlying photodynamic injuries of plant cells and tissues upon disturbing porphyrin metabolism. One of her remarkable findings in the course of these investigations was that certain Mg-porphyrins inhibit the expression of nuclear genes encoding enzymes of their own biosynthesis, thus ultimately suppressing their accumulation.

Dr. Yaronskaya contributed to the investigation of the multifunctionality of 5-aminolevulinic acid (ALA)—a pivotal precursor in chlorophyll and heme biosynthesis. Her contributions led to the conclusion that ALA also possesses properties of a plant growth regulator. Among possible mechanisms of such an action Dr. Yaronskaya has suggested a connection between the metabolism of ALA and the phytohormone cytokinin. She has also found that high levels of endogenous or exogenous ALA result in stabilization of certain plant proteins which may contribute to the promotion of plant abiotic stress tolerance. These discoveries were successfully applied in the framework of scientific programmes supported by Belarus national funds devoted to topics such as “Biorational pesticides,” “Innovative biotechnologies,” and “Fundamental basis of biotechnologies.”

For a large period of her scientific life, Dr. Yaronskaya closely collaborated with German scientists, mainly from Humboldt University, Berlin. Among them were Professor Dr. P. Hoffmann, Dr. G. Walter, Professor Dr. B. Grimm, Dr. Heiko Lokstein, and Professor Dr. E. Klose (see Fig. 2). These fruitful collaborations enabled to elucidate aspects of plastid-to-nucleus interactions, including studies on the influence of plastid signals on chloroplast biogenesis, expression of genes encoding enzymes of chlorophyll biosynthesis, as well as substrate channeling in a complex

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between the key porphyrin biosynthetic enzymes, Mg-chelatase and *S*-adenosyl-L-methionine:Mg-protoporphyrin IX methyl transferase.

Dr. Yaronskaya was (co-)author of more than 150 scientific papers in national and international journals, of two chapters in monographs, and four patents. Together with Professor Dr. N. Averina, she has edited a monograph “Biosynthesis of tetrapyrroles in plants.” Dr. Yaronskaya was well-known in the scientific community, as an open-minded and modern scientist. Her passing is a great loss for the scientific community, and all her relatives and friends. We will always remember her, not only as a truly collaborative-minded colleague but also as a warm-hearted and amiable personal friend (see Fig. 2).



**Fig. 1** Elena Yaronskaya (1955–2011)



**Fig. 2** Elena Yaronskaya (7th from *left*) at the German-Belarus Binational Meeting on Biophysics of Photosynthesis (2003) in Egsdorf, Germany