



In memory of Academician of the Russian Academy of Sciences
VYACHESLAV VALENTINOVICH LYAKHOVICH

On April 24, 2023, at the age of 83, the scientific director of the Research Institute of Molecular Biology and Biophysics of the Federal Research Center for Fundamental and Translational Medicine, academician of the Russian Academy of Sciences Vyacheslav Valentinovich Lyakhovich, one of the leading scientists in our country and an internationally distinguished scientist, who made a significant contribution to the field of biological oxidation systems and xenobiochemistry, passed away.

The main areas of the scientific activity of V.V. Lyakhovich included fundamental and applied studies of the membrane organization and biochemical functions of mitochondria and microsomes, as well as the study of the phenomenon of free-radical processes of lipid peroxidation in biomembranes involved in the development of many pathological conditions.

The development of methods of preparative biochemistry by his team resulted in purification of all components of the microsomal oxidation chain and the creation of a bank of monoclonal antibodies. This made it possible to quantify the molecular forms of cytochrome P450 in biological objects. Results of these studies provided new knowledge about the localization of the active centers of cytochromes P4501A1 and P4502B1, stoichiometry, and the interaction of protein components of the monooxygenases in biomembranes. V.V. Lyakhovich and his team developed a new class of inhibitors of monooxygenase reactions that covalently bound to the SH group of the active center of cytochrome P450. Works by V.V. Lyakhovich made an important contribution to solving the problems of chemical ecology. The results of studies of the induction of xenobiotic biotransformation enzymes made it possible to identify species- and tissue-specific regulatory factors and to develop a method for a comprehensive assessment of xenobiotic metabolism systems in humans.

In cooperation with healthcare institutions, V.V. Lyakhovich performed studies on the molecular genetic basis of the development of socially significant diseases. The results of these studies deepened our understanding of such important aspects of biomedicine as gene polymorphism and predisposition to the development of multifactorial pathologies, the influence of genetic factors on drug response, primarily the role of polymorphism of genes encoding transport proteins and drug metabolism enzymes in the formation of multidrug resistance of tumor cells in hematological malignancies. Academician Lyakhovich and his colleagues paid much attention to the search for new molecular genetic markers of tumor tissue transformation. These studies have culminated in novel molecular biological technologies that are in demand in clinical practice for predicting, more accurate diagnostics, and effective personalized drug therapy of oncological diseases.

The results of scientific research by V.V. Lyakhovich were highly appreciated by the scientific community. In 1994, he became a laureate of the N.I. Pirogov Prize awarded by the Russian Academy of Medical Sciences for the series of studies entitled “Systemic mechanisms of adaptive-compensatory reactions under the influence of environmental factors on the body”. In 1998 V.V. Lyakhovich became a recipient of the State Prize in Science and Technology of the Russian Federation for his work “Microsomal oxidation and drug metabolism: mechanisms of oxidative reactions catalyzed by cytochromes P450 and their modeling”, and in 2004 he was awarded the Paul Ehrlich Medal of Honor. V.V. Lyakhovich was also awarded the medal “For Labor Distinction” for many years of his fruitful scientific activity.

V.V. Lyakhovich was a member of the Editorial Board of the journal *Biomeditsinskaya Khimiya*. Vyacheslav Valentinovich was always opened for his colleagues. In scientific discussions at seminars, everyone had an equal opportunity to express their opinion. All this formed an atmosphere of free scientific research in the team. The bright memory of Vyacheslav Valentinovich will forever remain in the memory of his grateful colleagues and students.