

The 70th Birthday of Vladimir Konstantinovich Plakunov



In March 2005, Professor V.K. Plakunov—a doctor of biology, a principle researcher at the Laboratory of Oil Microbiology at the Winogradsky Institute of Microbiology, Russian Academy of Sciences, and an honorary scientist of the Russian Federation—celebrates his 70th birthday.

Plakunov was born in Moscow. After graduating from the Faculty of Chemistry at Moscow State University in 1958, he became a postgraduate student at the Institute of Chemistry of Natural Compounds of the USSR Academy of Sciences (presently, the Institute of Bioorganic Chemistry, Russian Academy of Sciences). In 1962, he defended his candidate's dissertation in microbiology.

From 1962 through 1980, Plakunov worked at the Department of Microbiology, Moscow State University, first as a junior researcher and then as a senior researcher, combining his research activity with the administrative duties of scientific secretary of the Faculty of Biology. In 1976, Plakunov was awarded a doctoral degree for his investigations into the mechanisms of action of antibiotics and antibiotic resistance of microorganisms. Since 1980, he has been working at the Winogradsky Institute of Microbiology.

Plakunov is widely known in the scientific circles of Russia and other countries for his investigations into the physiology and biochemistry of microorganisms and regulation of their metabolism. As far back

as 1963, he formulated a new approach to the study of the mechanism of action of biologically active substances. He assumed that the molecule of a biologically active compound has a moiety responsible for the recognition of the metabolic target of this compound (i.e., for the specificity of its action) and a moiety responsible for the biological activity of the compound, the value of which is determined by its ability to enter the cell and to reach the metabolic target, as well as by its affinity for this target. This approach makes easier the obtaining of new active substances (such as semisynthetic antibiotics). Plakunov made a great effort to study the mechanisms of the membrane transport of various organic compounds. He was the first to observe (in 1973) active transport of antibiotics from antibiotic-resistant microorganisms. Investigations along this line culminated in the establishment of a new type of metabolic regulation of microorganisms, namely, the excretion (active release) of metabolites (effectors), which was called membrane regulation. This type of regulation was the subject of the candidate's dissertations of a number of Plakunov's pupils and his monograph *Fundamentals of Enzymology*, published in 2001.

Presently, Plakunov's research efforts are concentrated on the study of the responses of microorganisms to multiple stress factors. The significance of investigations of such a kind comes from the necessity of understanding the processes occurring in anthropogenically impacted microbiocenoses and other natural ecotopes, such as oil fields.

Plakunov is the author and coauthor of more than 100 scientific publications, including several monographs. As a recognized authority in the field of regulation of microbial metabolism, he has been invited to participate in many national and international congresses and conferences. He has guided about 20 researchers in the writing of their candidate's and doctoral dissertations.

Plakunov is currently involved in research and teaching activities. He has organized lecture courses on the fundamentals of microbial biochemistry, enzymology, and metabolic regulation in some leading universities of Russia and other former Soviet Republics (Moscow State University, Russian Chemical Engineering University, Kazan State University, and others).

Plakunov was chairman of the Council of Biology at the USSR Ministry of Higher and Secondary Education. For many years, he headed a laboratory at the Institute of Microbiology. Presently, he is a member of

several dissertation defense councils, an expert with the Russian Foundation for Fundamental Sciences, a member of the Central Council of the All-Russia Society for Microbiology, and deputy editor-in-chief of the journal *Mikrobiologiya*.

Plakunov has been awarded the medals of Labor Veteran and In Honor of the 850th Anniversary of Moscow and a diploma from the Presidium of the Russian Academy of Sciences. His achievements have also been

recognized with several gold and silver medals from the Exhibition of National Economic Achievements.

The colleagues and pupils of Plakunov appreciate his professionalism, benevolence, kindness, and willingness to counsel and impart knowledge. We congratulate Professor Plakunov on his 70th birthday and wish him good health, long life, and further success in his scientific career.

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