

OBITUARY

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Vladimir Ivanovich Descherevsky

On November 20, 1975, Vladimir Ivanovich Descherevsky, a prominent specialist in the field of biophysics of muscle contraction, died untimely.

V.I. Descherevsky was born on October 24, 1939. In 1957 he entered the Faculty of Physics, where he specialized in the Department of Biophysics that had been created not long before. During his student years, for the first time the outstanding scientific and human qualities of V.I. Descherevsky emerged. He carried out a study of the isotope effects of D₂O in solutions of muscle proteins and, based on this study, proposed explanation for the physicochemical mechanism for increasing the thermal stability of proteins in D₂O.

After graduating from the university in 1963, V.I. Descherevsky began working at the Institute of Biophysics in Pushchino and made a great contribution to the creation of this new scientific base.

The scientific interests of V.I. Descherevsky are concentrated in the problems of muscle contraction and enzymatic catalysis. In his research, he combined subtle experimental art with deep theoretical analysis. By 1968, Vladimir Ivanovich completed the creation of a general mathematical scheme for the functioning of the striated muscle. He succeeded in linking the kinetic parameters of the interaction between actin and myosin with the dynamic characteristics of muscle contraction. The ability to identify essential features in a complex phenomenon, the combination of deep knowledge of physics, biology and mathematics allowed the author to build a physically clear mathematical (kinetic) theory of muscle contraction based on this scheme. In this theory, all the data known by that time on the mechanics and energetics of both the striated muscles of vertebrates and the flying muscles of insects were explained. The theory made it possible to predict a number of new modes of work of muscle, which were then experimentally implemented by V.I. Descherevsky and his collaborators.

The study of the contractile properties of the muscle from the point of view of the developed theory allowed us to determine the main molecular kinetic parameters of the elementary contractile process in the muscle. These works of V.I. Descherevsky became widely known both in our country and abroad, putting their author among the leaders of this direction.

V.I. Descherevsky's report at the IV International Biophysical Congress in 1972 aroused great interest among the congress participants.

In the following years, V.I. Descherevsky conducted a theoretical and experimental analysis of the work of the main muscle proteins in solution. The idea of the cyclic mechanism of ATP cleavage by muscle proteins allowed him to write a kinetic biochemical scheme of muscle proteins and determine its main kinetic constants. Based on the study of the interaction of actin with the troponin-tropomyosin system, a mathematical model of the regulation of actomyosin systems by calcium ions was also created. An essential consequence of the model was the realization of the fact that thermal fluctuations of macromolecules of the regulatory protein complex are fundamentally important for their functioning.

Far from everything that V.I. Descherevsky conceived was carried out, however, what he did left a big mark on our science.

V.I. Descherevsky lived by a tense, eventful life, without any discounts for a serious illness that began in his early student years. An outstanding researcher, a man of great moral merit, a faithful, disinterested comrade, he evoked love and respect from all who knew him. Passionate ability to selflessly devote himself to his beloved work, great courage, which helped him to treat even the difficult aspects of his life with humor, made his life happy. This feeling of the joy of life, the joy of communication and work was transmitted to the people around him. This is how he will stay in our memory.

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