

CO-ORGANIZED EVENT

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Perspective of using inhibitors of proteolysis for antiviral treatment

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We presented the new theory of flu pathogenesis with participation of proteinases-inhibitory system is offered. Cleaning and concentration of flu virus with centrifugation does not exempt virus from proteins with proteinases activity. Additional cleaning of flu virus in saccharobise's ladder-shaped gradient showed that the main quantity of flu virus and the greater part of proteolytic activity has been localized around 38-43% saccharobise's concentration. Primarily associated flu virus proteinase in sacchorobise's gradient was divided into four isoforms, and proteinase from normal horionallantoisny membranes – into 3 isoforms. The latter were 345 times lower than virus inductive forms. During experimental animal's infection by flu virus, there was violation of fermentative and inhibitory balance, especially during the first hours after infection. Virus-inductive cellular inhibitor plays an important role in proteinase blocking during first hours after infection. After its exhaustion, the leading role in the development of infection is assumed by trypsin-like proteinases which started to split hemagglutinin and in this connection, there was the growth of an infectious titer. From the lungs of healthy mice, six isoforms of trypsin-like proteinase have been discharged. To them anti-protease immune sera were obtained and the treatment of animals with their use was carried out. 60% of the mice survived only at the effect of anti-serum to the III isoform. Inhibitor of trypsin-like proteinases emitted from the lungs of healthy mice, protected the experimental animals from death for 80% and is a perspective anti-influenza drug. It has been established that the greatest number of trypsin-like proteinase and its inhibitor contained in the fractions of waste of the I and II stages of industrial manufacturing of gamma-globulin and albumin from donor blood which are utilized.

Biography

Valentina Divocha graduated from I I Mechnikov Odessa State University, Faculty of Biology (Department of Virology) in 1967. She continued her Postgraduate study at Odessa Institute of Virology and Epidemiology specializing in Virology (1973). In 1974, she was awarded her Candidate Degree with the thesis "Interaction of coxsackie B viruses with sensitive cell cultures and their antigenic relationships." In 2009, she was awarded her Doctoral Degree with the thesis entitled, "Biological basis antiproteinase therapy of influenza". She has guided a Doctoral and two Master's theses. She has 35 years of experience. She has more than 190 scientific publications, 3 monographs, textbook "Virology" (2012), 10 patents, and 3 innovations. She is currently working as the Head of the Laboratory of Experimental and Clinical Pathology for Ukrainian Research Institute of Transport Medicine, and is the Supervisor of the nine research programs in Virology and Biochemistry.

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