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PROTEOLYSIS INHIBITORS INFLUENCE ON THE INTERACTIONS OF INFLUENZA VIRUSES WITH MEMBRANES OF SENSITIVE CELLS. V.P. Lozitsky, A.S. Fedtchouk and Yu.I. Girliya. Research Institute of Virology and Epidemiology, Odessa, Ukraine.

We have stated before the significant role of proteolysis system at the early and following stages of various viruses reproduction. In the present paper the regulation possibility of influenza viruses interaction with sensitive cells by means of proteolysis was studied.

With the use of the method of specific substrates hydrolysis it was shown that proteolysis inhibitors E-ACA (E-aminocaproic acid) and Ambenum (para-aminomethylbenzoic acid) decrease the proteolytic activity of membranes of sensitive cells and also of purified samples of influenza viruses A and B as of the virus-membranes complexes.

The interaction of virions with the membranes of the sensitive cells was investigated by means electron microscopy. It was discovered that the proteolysis inhibitors hinders virus penetration through the cell membranes. It was seen clearly from the pressed in points absence on the membrane and also from the desintegration and mutual lysis decrease on the viral and membrane surfaces at the contact points. The results obtained testify the hindering influence of proteolysis inhibitors on the earliest stages of virus-cell interaction.

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APROTININ TREATMENT OF INFLUENZA B VIRUS BRONCHOPNEUMONIA OF MICE

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The basic proteinase inhibitor from bovine organs, aprotinin (active ingredient of Trasylol) has been shown to protect from lethal Influenza A virus and Sendai paramyxovirus bronchopneumonia of mice. Here we show that aprotinin possesses therapeutic efficacy against influenza B virus bronchopneumonia. Intraperitoneal injections of aprotinin into mice infected with the lung-adapted Flu B/HK/73 virus inhibited the virus replication in mouse lungs, reduced the development of fatal hemorrhagic pneumonia and pathologic reactions in mouse respiratory tract, normalized the body weight gain of infected mice. With such aprotinin treatment about 50% of animals infected with lethal virus dose were protected from death. These data have medical significance because Flu B epidemics have appeared in human populations at the last decade and Rey's Syndrome characterised by encephalopathy and fatty changes of the liver is a disorder associated with Flu B virus infection.