

STUDIES ON SOME NEW BIOLOGICAL PROPERTIES OF ISOPRINOSINE CONCERNING ITS BUFFER CAPACITY.

S. N. Pancheva¹, R. Nacheva², and M. Lidaks³, ¹Institute of Microbiology, Bulg. Acad. Sci., Pharmaceutical Faculty, MA, Sofia, Bulgaria, ²Institute of Organic Synthesis, Latv. Acad. Sci., Riga.

Isoprinosine /Iso/ is known up to now as antiviral and immunomodulating agent. It is composed of two parts - inosine and N,N-dimethylamino-2-propanol p-acetamidobenzoate in a molar ratio, 1:3 and applied in biological systems could affect the pH values of the medium. Investigations have been conducted to look for, if this complex molecule has properties as buffering system with specific buffer capacity in conventional cell culture medium in pH range 6.4-8.4. In this relation by using potentiometric titration the protolysis constants /pKa/ of the individual components were determined, which are: 8.86 for inosine, 9.66 for dimethylamino-2-propanol and 5.81 for p-acetamidobenzoic acid. It was found that Iso increases the buffer capacity mostly in the range of pH 7. It may be assumed that the buffering properties of the components of Iso could be exhibited by the complex as well, influencing the medium buffer capacity as regards to the OH⁻ and H⁺ in the respective pH ranges. Studies in vitro have shown that Iso has a stimulating influence on the average survival time of the cell culture which we assumed to be due to the additional buffering properties of this molecule. Our results contribute in the clarification of the mechanisms of the biological activity of isoprinosine.

ANTIVIRAL ACTIVITY OF PROTEOLYTIC INHIBITOR AMBENUM (PARA-AMINOMETHYLBENZOIC ACID). V.P. Lozitsky, A.S. Fedtchouk, Yu.I. Gyrliya, A.G. Kolomiets, N.D. Kolomiets, V.A. Novitsky, A.Yu. Sudakov, V.P. Buyko, I.N. Fedtchouk and P.G. Veveritsa. I.I. Mechnikov Research Institute of Virology and Epidemiology, Odessa, Ukraine.

Taking into account the importance of the proteolytic system in the development of viral infections we have studied antiviral properties of well known antiproteolytic especially antifibrinolytic drug Ambenium. This preparation hinders reproduction of the influenza A and B and of Newcastle disease viruses in CAM tissue culture. We have shown that Ambenium reduces proteolytic activity during interaction of purified and concentrated influenza A and B viruses with plasmamembranes of sensitive cells. The preparation has decreased of proteolytic activity in the lungs of infected with influenza virus mice. We have observed the effectiveness of prophylactic and therapeutic administration Ambenium during experimental influenza in mice. We have demonstrated antiherpesvirus activity of Ambenium too. This preparation inhibited the herpes simplex virus reproduction in tissue cultures and statistically reliable reduced the number of lethal cases and increases the life longitude of mice with different forms of experimental herpes. The results of clinical observations evidence that inclusion of Ambenium into the complex of drugs used for treatment of influenza and other acute respiratory viral infections in children and of genital herpes in adult patients is advisable. So experimental results and clinical data clearly show the possibility of proteolytic inhibitor Ambenium use as the wide spectrum antiviral preparation.