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ARBIDOL - NEW ANTIVIRAL DRUG

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Arbidol - Hydrochloride monohydrate 1-methyl-2-phenylthiomethil-3-carbethoxy-4-dimethylaminomethyl-5-oxy-6-bromoindole. Arbidol selectively inhibits the reproduction of influenzal viruses of A and B types in the cell culture, decreases the mouses lethality from influenzal pneumonia by 60-70%; it stimulates the induction of interferon in the cell culture in humanus and animals, increases the resistance of mice to viral infections (influenza, herpes) and bacterial ones (S.typhimur., E.coli) in experiment by activating the protective functions of the organism. A clear-cut stimulation effect of arbidol has been established in different forms of cellular immune responses. A significant increase in the humoral immune response in mice $(CBAxC57B1/6)F_1$ after a single arbidol administration has been found using the model of the secondary immunodeficiency induced by cyclophosphan. Arbidol is not toxicity. It is devoid of mutagenic and teratogenic potentials. The results of clinical studies of arbidol make it possible to consider it to be a promising antiviral drug with an immunostimulating effect meant for the treatment and prophylaxis of influenza and other ARVI, as well as an immunocorrector in secondary immunodeficient states in patients with viral and bacterial infectins.

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ANTIVIRAL MACROMOLECULAR THERAPEUTIC SYSTEMS: PRINCIPLES AND METHODS OF DESIGN

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Two basic research topics are already under development: motivated synthesis of the new polymers, possessing the desired antiviral properties and design of macromolecular therapeutic systems by means of chemical conjugation of polymeric substances with known antiviral drugs and different vector groups for drug targeting transfer. The original polymers based on maleic anhydride with interferon-producing, antiviral, immunostimulating and immunoadjuvant activity, resulting in synergistic enhancement of the vaccine's prophylactic effect have been synthesized. They are much less toxic than already known polycarboxylates ($LD_{50} > 2000$ mg/kg) and absolutely non-nephrotoxic. The chemical structure of comonomers allows to obtain exclusively the low molecular mass products without admixture of toxic higher molecular mass fractions, to exert control over the rigidity of polymer chain and hydrophillic-hydrophobic balance. Polymer-linked antiviral agents were demonstrated to exhibite the synergistic increase in pharmacological effect without loosing macromolecular carrier's own chemotherapeutic properties, extent decrease in the acute toxicity and other undesirable side effects, compensation for immunodepressive activity, prolongation of pharmocological effect, a much more wide range of therapeutic doses, realization of new action mechanisms, particularly overcoming the barrier of resistance.