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Long experience in the use of various iodine preparations has shown that while possessing pronounced antibacterial and antiviral properties, wide-spectrum antimicrobial activity, and lacking mutagenic and teratogenic effects, they are toxic when introduced to the human body, which significantly narrows the scope of their clinical application. The search for alternative ways to solve the problem of high toxicity of inorganic iodine compounds has led to the development of iodine-containing organic complexes. Iodine is characterized by a high bioactivity and exerts wide antimicrobial spectrum with no recorder evidences of resistance development to iodine in bacteria and viruses. The new anti-infectious drug (FS-1) containing molecular iodine has been recently created

They are active ingredients of mixtures that in binary compound solutions accommodate molecular iodine, bio-organic ligands, and atomic number 19 and metallic element halogenides. In this medication molecular iodine is in such a vigorous kind that once oral administration it minimizes cyanogenetic effects in humans. Antecedently it absolutely was shown that the active advanced (AC) of the medication contains molecular iodine that's settled within within of dextrin and is coordinated by metallic element halides and polypeptides (LiI5-ʰ-dextrin polypeptide). In these kinds of complexes the electronic structure of the I2 molecule is completely different from the electronic structure of I2 in complexes with organic ligands, or in its free state. Apparently, within the AC the molecular iodine exhibits acceptor properties with relevancy polypeptides, and donor properties with relevancy metallic element salt. amongs make sure the presence within the studied mixtures of the 3 active ŏŜyűŜℕă ăŜűűfŜŘ I·Y⁻2y∃ űKŜ ʰ-dextrin helix: molecular iodine coordinated metallic element halogenides and polypeptides, triiodide, and metallic element halogenides. Mistreatment UV spectrometry, the interaction of ʰ-dextrin-LiCl(I)-I2-polypeptid with the title ester triplet was investigated. Comparison of the quantum chemical calculations allotted for electronic transitions obtained for the structure that models the ƛyűŜℕI·ŏűƛ2y⁻2Ŧʰ-dextrin-LiCl(I)-I2-polypeptid with the ester triplet indicates that the deoxyribonucleic acid nucleotides will displace peptide and kind stable complexes with molecular iodine and metallic element halogenides. In such structures, molecular iodine binds each the ester triplet and metallic element halogenides. We've got shown that the presence of molecular iodine is significant for activity of compounds that inhibit the situation of HIV-1 integrase. Iodine prevents the situation of integrase from the formation of with HIV deoxyribonucleic acid and inhibits the active complex of integrase and microorganism deoxyribonucleic acid, changing into the middle of another protein advanced, and binding along the situation of integrase and microorganism deoxyribonucleic acid.

The manifestation of the phagocytic response is a significant indicator of the body reactivity state and level of its immune activity. The coordination compound of iodine with alpha-dextrin and polypeptides was synthesized at the Scientific Center for Anti-Infectious Drugs JSC, the effect of which on the phagocytic activity of granulocytes and monocytes in BALB/c and C57BL/6 mice was studied. Phagocytosis is considered as one of the major host defense function, which is a fundamental component of the innate immune response.

Host d