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# Abstracts

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# Receiving and Research of Cryogels for Carriers of Medicinal Substances

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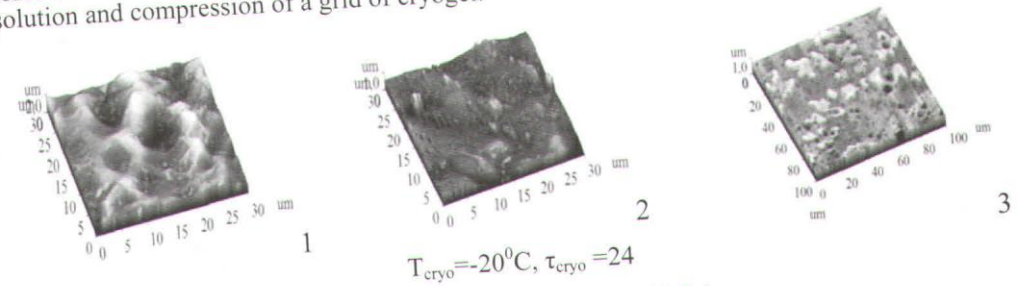
Cryogels are the effective tampony remedies considerably reducing a filtration of water in the porous environment. They are harmless to people and are ecologically safe for environment. In this regard, in the work have been set the problem of development on the basis of polymers (PVA, NaCMC, Gelatin) and investigation of possibility of their use as carriers of medicinal substances.

For definition of the nature of interaction of composite PVA-NaCMC cryogels with medicinal substance, swelling ability of gels in solutions of richlokain with concentration 0.25, 0.5, 0.7, and 1 % was investigated. In the result the equilibrium increase of volume of cryogels comes within 3-4 hours with further monotonous growth. Compositions PVA-NaCMC with a ratio (1:1) and (1:2) low extent of swelling of gels in the solution of richlokain in comparison with swelling in water is characteristic. And increase in volume of cryogels considerably decreases with increase of concentration of medicinal substance in solution. So, if daily α for PVA-NaCMC with a ratio (1:1) in water it is equal 20 g/g, and in solution of richlokain with concentration of 0,25 M it is equal 17,5, at concentration of medicine 1M α matters equal 8 g/g . Such compression of gel can be explained with effect of solution of richlokain as ionic force under the influence of which there is a deterioration of thermodynamic quality of external solution and compression of a grid of cryogel.




$T_{cryo}$=-20$^0$C, $\tau_{cryo}$ =24

PVA-NaCMC 1) 1:1; 2) 1:2 3) 2:1

Figure 1- NPM pictures of PVA-NaCMC cryogels with the rihlokaine contents 1%

By means of the nuclear and power microscope (NPM) the morphology of the received composite cryogels was considered. With concentration increase the three-dimensional image of cryogels changes, there are frequent, more pointed peaks and according to them the number of porous deepenings increases also. It is quite natural that concentration of initial polymer has essential impact on geometry and the sizes of a time. Confirmation is that fact that upon transition from less concentrated PVA solutions to more concentrated there is a narrowing of a time from 0,5-1 nanometers to 0,1-0,2 nanometers. In that way, the PVA-NaCMC gels formed as a result of cryogenic processing, are materials with the uniform tubular and hollow and developed porous structure with sizes of time up to 0,1-10 nanometers that testifies to their prospects as carriers of medicinal substances.

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