

THE RELEVANCE OF THE CREATION OF PHARMACEUTICAL PRODUCTS CONTAINING METALLIC NANOPARTICLES

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In development of modern medicine the vital part belongs to exploration of the potential of metallic nanoparticles. This is specified, first of all, by a wide range of their application, and also by the high effectiveness of the drugs that contain nanoparticles.

Changing the size of particles has been shown to have the direct impact on changing of physical and chemical properties of substance, parameters of the crystal lattices, melting points, electronic structure and also catalytic and other properties.

Changing the following properties may cause changing of their usage in the pharmaceutical industry.

The given size of nanoparticles causes the subsequently modification of physical and chemical properties of metallic, which can become a background for creation of nanomaterials and nanocompositions that are able to change the methods of diagnosis and treatment.

Nowadays, scientists describe the broad application of various metallic nanoparticles. Gold, Bismuth and Silica nanoparticles have been extensively studied for enhancing efficiency and reducing side-effects of therapy of oncologic diseases.

Ferum nanoparticles are widely used to treat various types of anaemia and also for diagnosis of diseases, in particular for higher sensitivity of Computerized Axial Tomography. Zinc and Gold Nanoparticles facilitate regeneration and rejuvenation of skin cells and mucous membranes, but also possess proper antimicrobial activity.

Silver also plays an essential role in nanomedicine. A study on Argentum nanoparticles has made significant progress which caused an in-depth exploration of their application for pharmaceutical purposes.

It was proven the antiviral and antifungal activity; antiviral, anti-inflammatory, immune-modulatory effects of the given drugs.

In vitro and in vivo the bactericidal and antiviral activity of given silver nanoparticles was proved. Used externally, it was observed fast regeneration of the affected skin areas. Thus, it was established that metallic nanoparticles possess healing components and stimulate regenerative processes.

From the above, we could conclude that the development of new drugs on the basis of nanoparticles remains an extremely valuable and timely issue due to the constant progress of modern medicine. This applies particularly to antiviral and antimicrobial drugs, which will make it possible to resolve the problem of antibiotic resistance.