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Biography

Archakov A I Scientific Advisor of Institute of Biomedical Chemistry, Was born January 10, 1940, in Kashin, Kalinin (Tver) region – scientist, biochemist.A.I. Archakov had organized a scientific school to study molecular organization and functioning of oxygenase cytochrome P450-containing systems, molecular mechanisms of the structure and function of membranes and biological oxidation. Under the guidance of A. I. Archakov, the institute's members have developed a fundamentally new pharmaceutical composition "Phosphogliv" with antiviral activity for the treatment of liver diseases of various etiology. A.I. Archakov's present-day/current areas of expertise relate to research in the field of post-genomic technologies, nanobiotechnologies, proteomics, development of approaches to create personalized medicine of the future.A.I. Archakov is the pioneer in the development of proteomics in Russia.

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PHOSPHOLIPID MICELLES AS THE MEDICINES THEMSELVES AND DRUG DELIVERY SYSTEM

Phospholipids, especially phosphatidylcholine, are very commonly used in medicine as a drug delivery system: most investigated of them are liposomes. The aim of work was the use of phospholipid micelles rather liposomes as drug delivery systems and as drugs themselves. To obtain the phospholipid micelles are extremely small size we used homogenization under high pressure, ultrafiltration and freeze-drying. Phosphogliv is Russian original drug, which includes the phospholipid micelles with a size of 30-50 nm in diameter with incorporated glycyrrhizinic acid, which possesses weak detergent properties and the ability to induce the synthesis of -interferon was used for the treatment of liver diseases including viral hepatitis (B and C). Phosphogliv exists on pharmaceutical Russian market with volume of ~ 2 bln. of dollars. Since 2016 the other phospholipids micelles with size of 15-25 nm in diameter without glycyrrhizin acid were produced for improvement of reverse cholesterol transport and normalization of lipid metabolism. Phospholipid micelles as drug delivery system are biodegradable, biologically inert, do not cause allergic, antigenic, or pyrogenic reaction. The new technology was created to produce phospholipid micelles with such particle's diameter in the form of lyophilic powder, which is stable at storage. The main principles of incorporation of pharmacologically active substances such as doxorubicine, arbidole, rifampicine etc. into phospholipid micelles considerably increased their bioavailability and therapeutic efficiency.

Note: