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Antibiot Khimioter. 2001;46(4):6-10.

[Optimization of "Photosens" pharmakokinetics by biodegradable nanospheres].

[Article in Russian]

Skidan IN, Bobruskin AI, Guliaev AE, Shalkharbaeva SD, Severin SE, Steinniger S, Kreuter J, Gel'perina SE.

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Abstract

The present study is dedicated to investigation of pharmacokinetics of the colloidal delivery system based on polybutylcyanoacrylate nanoparticles for the II generation photosensitizer Photosense. Free or nanoparticle-bound Photosense was injected intravenously in healthy rats in the dose 15 mg/kg. It was shown that pharmacokinetic curve of the free drug was characterized by peak concentration while plasma concentrations of nanoparticulate Photosense were relatively steady. Elimination of nanoparticulate Photosense was more rapid comparing to the free drug. It is noteworthy that nanoparticles did not enhance liver uptake of the drug. Lung level of nanoparticulate drug was found to be lower and spleen uptake was enhanced. More important is the fact that nanoparticles provided two-fold decrease of Photosense skin concentration which is potentially important for decrease of drug-related skin phototoxicity. The above data provide evidence that optimization of Photosense pharmacokinetic parameters could be achieved by the use of nanoparticles.

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