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Toxicity of laser irradiated photoactive fluoride PrF3 nanoparticles toward bacteria

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Abstract

© Published under licence by IOP Publishing Ltd. The article is devoted to exploration of biological effects of crystalline PrF3 nanoparticles toward *Salmonella typhimurium* TA 98 bacteria under the laser irradiation. Obtained results show bactericidal activity of PrF3 nanoparticles and optimal parameters of laser irradiation (power of laser irradiation, wavelength, diameter of the laser spot, and exposure time) have been found under which the effects of bactericidal activity become the most significant. Survival of bacterial cells under laser irradiation with wavelength 532 nm in colloidal solution of PrF3 nanoparticles was 39%, 34%, 20% for exposure times 5 minutes, 15 minutes and 30 minutes, correspondingly.

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