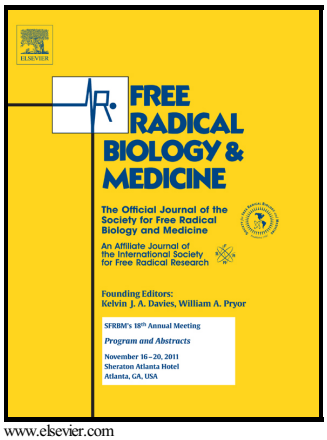

PEGylated ceria nanoparticles used for radioprotection on Human liver cells under γ-ray irradiation

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PEGylated ceria nanoparticles used for radioprotection on human liver cells under γ-ray irradiation

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ABSTRACT:

Ceria nanoparticles (CNPs) have recently been shown to protect cells and animals from radiation-induced damage. However, most of the CNPs used in previous studies were either naked or weakly protected by surfactants, which inevitably encounter many obstacles in biological applications. Here, alendronate was used as an ideal anchor to graft polyethylene glycol (PEG) onto CNPs, leading to enhanced stability, reduced cytotoxicity and improved biological properties. Further investigation assessed the protecting ability of the nanoparticles against radiation-induced effects for human normal liver cells (L-02), indicating that the PEGylated CNPs