Title:	Polyethylene-glycol coated maghemite nanoparticles for treatment of dental hypersensitivity
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Abstract:	Dental hypersensitivity is a common oral problem that is directly related to the number and the diameter of dental tubules. Therefore, the occlusion of the tubules using compounds capable of penetrating and precipitating into dental tubules may result in a long-lasting remedy to this problem. In this in-vitro study, the ability of polyethylene-glycol coated maghemite nanoparticles for treating dental hypersensitivity was investigated. Due to their superparamagnetic characteristics, these nanoparticles are susceptible to navigation inside the dental tubules via an external magnetic field. The experiments were performed in various durations for the purpose of determining the optimum time for the effective occlusion of dental tubules. Our findings showed that the polymer-coated maghemite nanoparticles exhibited a significant potential for reducing the permeability of dental tubules by occluding the open tubular area after a 120 min.

Keyword:	Magnetic materials; Biomaterials; Nanoparticles; Diffusion
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