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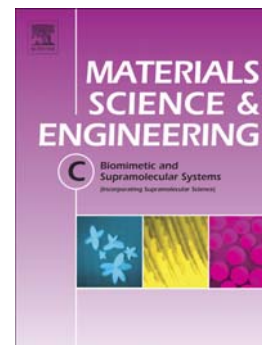
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Single Step Synthesis, Characterization and Applications of Curcumin Functionalized Iron Oxide Magnetic Nanoparticles

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Abstract

Magnetic iron oxide nanoparticles have been well known for their applications in magnetic resonance imaging (MRI), hyperthermia, targeted drug delivery, etc. The surface modification of these magnetic nanoparticles has been explored extensively to achieve functionalized materials with potential application in biomedical, environmental and catalysis field. Herein, we report a novel and versatile single step methodology for developing curcumin functionalized magnetic Fe₃O₄ nanoparticles without any additional linkers, using a simple coprecipitation technique. The magnetic nanoparticles (MNPs) were characterized using transmission electron microscopy, x-ray diffraction, fourier transform infrared spectroscopy and thermogravimetric analysis. The developed MNPs were employed in a cellular application for protection against an inflammatory agent, a polychlorinated biphenyl (PCB) molecule.

KEYWORDS: Curcumin, Iron oxide, Functionalization, Cell viability, Anti-inflammatory

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