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Nanohydroxyapatite-coated hydroxyethyl cellulose/poly (vinyl) alcohol electrospun scaffolds and their cellular response

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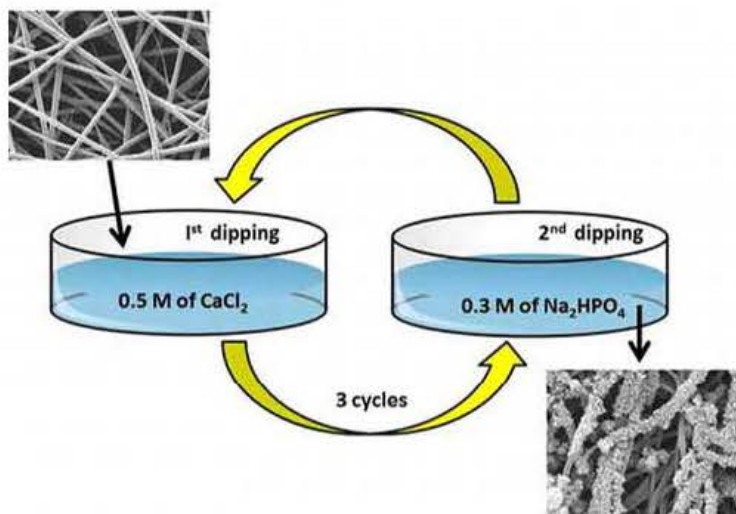
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ABSTRACT

The present study focused on the preparation of nanohydroxyapatite (nHA)-coated hydroxyethyl cellulose/polyvinyl alcohol (HEC/PVA) nanofibrous scaffolds for bone tissue engineering application. The electrospun HEC/PVA scaffolds were mineralized via alternate soaking process. FESEM revealed that the nHA was formed uniformly over the nanofibers. The nHA mineralization enhanced the tensile strength and reduced the elongation at breakage of scaffolds. The wettability of the nanofibrous scaffolds was significantly improved. The *in vitro* biocompatibility of scaffolds was evaluated with human osteosarcoma cells. nHA-coated scaffolds had a favorable effect on the proliferation and differentiation of osteosarcoma cell and could be a potential candidate for bone regeneration.



KEYWORDS: Bone tissue engineering, electrospinning, hydroxyethyl cellulose, nanohydroxyapatite coatings