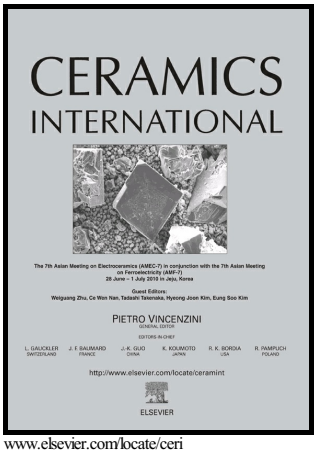

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Strontium and ciprofloxacin modified hydroxyapatites as functional grafts for bone prostheses

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Abstract

Both strontium and ciprofloxacin are known to be functional materials for the treatment of bone diseases associated to the loss of bone substance. In this work we prepared the strontium (Sr) modified hydroxyapatite (SrHA) and ciprofloxacin (Cip) modified SrHA bone substitutes by one pot facile chemical precipitation route. The calcium release is improved more for SrHA compared with stoichiometric HA owing to the higher solubility of the Sr. Drug release profile exhibited the sustained and prolonged release of Cip up to 45 days. The *in-vitro* cell responses showed that the Sr addition improved the ALP activity of the osteoblast like MG-63 cells which confirms the enhanced cell viability and functionality of the strontium modified hydroxyapatite ceramics.

Keywords: Hydroxyapatite; Strontium; Ciprofloxacin; Biocompatibility