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The effect of the type of HA on the degradation and mechanical properties of PLGA/HA composites

Ashutosh Naik

Biocon Research Limited, India

Phase pure HA was synthesised via a reaction between aqueous solutions of calcium hydroxide and orthophosphoric acid. The powder produced was either used as produced (uncalcined) or calcined in air or calcined in a humidified argon atmosphere. An *in-vitro* degradation study was carried out in phosphate buffered saline (PBS) to understand the importance of the effect of calcination of HA on the properties of PLGA/HA composites. The importance of the potentially competing effects of buffering effects of the calcium phosphate filler and particle-mediated water sorption on the degradation products of PLGA/HA composites was explored. The influence of type of HA on the mechanical properties of the composites was also investigated. The results obtained indicated that the degradation rate of the composite might be better understood if both the buffering effects and the rate of water sorption by the composites are considered.

Biography

Ashutosh Naik has completed his PhD from the University of Cambridge in 2013 in Materials Science, after his MRes in Nanomedicine at the University of Newcastle and a BTech in Bio-Technology from JNTU, Hyderabad. He is currently working as Principal scientist (R&D department) at Biocon, India's largest biopharmaceutical company working on novel insulins. He has published papers in the *Journal of Materials Science and Engineering C* and the *Indian Heart Journal* and has peer reviewed articles for *Journal of Materials Science and Engineering C* and *Journal of Materials Science: Materials in Medicine*.

naikashutosh@gmail.com

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