



Assessment of Different Synthesis Route of Hydroxyapatite and Study of its Biocompatibility in Synthetic Body Fluids

¹Dhiraj Mehta, ¹Suja George, ^{2*}Anjuvan Singh

¹Malaviya National Institute of Technology Jaipur, India

²Department of Biotechnology and Biosciences, Lovely Professional University, Jalandhar, Punjab, India

Abstract: Biomaterials have found its extensive application in various fields and are widely accepted due to its non-viable properties and biocompatibility. There are several types of biomaterials and hydroxyapatite (Hap) is one of the material which is easy to synthesize and is used rapidly in the field of medical sciences. In the present study, different methods like sonication, precipitation and sonication with precipitation method were employed in order to evaluate the preeminent method for the synthesis of Hap. The characterization of the material was carried out by Fourier transmission infra red spectroscopy (FT-IR), X-Ray diffraction (XRD) and Scanning electron microscopy (SEM). Characterization studies confirmed the feasibility of hydroxyapatite synthesis using all the methods employed. In this study it was found that sonication followed by precipitation was the best suited method for the synthesis of hydroxyapatite. In-vitro assessment for biocompatibility of synthesized Hap was done by using synthetic body fluids (SBF) solution. The morphology, surface characteristics as well as biocompatibility of the obtained Hap was analysed from SEM studies. It was observed that a formation of apatite layer took place on the surface of hydroxyapatite when kept in synthetic body fluids (SBF) solution due to its nature of bioactivity

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