Green Synthesis, Characterization and *In vitro* analysis of novel Nano hydroxyapatite dental restorative material

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ABSTRACT

The aim of this study was to prepare a novel dental restorative material using Phyto-mediated synthesized nano hydroxyapatite. Hydroxyapatite [HAP, $Ca_{10}(PO_4)_6(OH)_2$] is considered as a flawless material for substituting the natural bone, because of its admirable biocompatibility & bioactivity property. This biomimetic material can also be used for bio molecular substrate delivery. Nano hydroxyapatite was synthesized using microwave assisted method from *Sesbania grandiflora* leaves and *Sesamum Indicum* seeds. Further the synthesized nano hydroxyapatite samples were characterized using SEM, FT-IR and XRD. Dental restorative material was prepared using synthesized Nano hydroxyapatite. Thus, the future work will be *In vitro* analysis of Dental restorative material. The present study reveals that the preparation of novel dental restorative material from natural source could be suitable for dental caries restorative applications.

Keywords: Hydroxyapatite, Biomimetic, *Sesbania grandiflora*, *Sesamum Indicum,* Microwave, Assisted, SEM, FT-IR, XRD, Dental.

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