Comparative study of Calcium Hydroxyapatite prepared via green synthesis using Ginger, Cinnamon, Moringa leaves and flowers for antimicrobial applications

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Abstract:

The present work attempts to synthesize CaHAP using Neem leaf extract, Ginger extract, Cinnamon extract, Moringa leaf, and Moringa flower extract as reducing agents and to characterize their structural, morphological, optical and anti-microbial properties. Green synthesis method has been employed to prepare nano CaHAP with modified properties. The produced nanopowders were characterized for comparative study with the laboratory grade CaHAP. XRD, FTIR, UV-Vis spectroscopy, and SEM have been employed to analyze the structure and morphology. Anti-microbial activity study proves these modified HAPs as a better contestant for bioactive properties from the plant extracts, highlighting its eco-friendliness and simplicity compared to conventional chemical synthesis approaches.

Keywords: *Nano CaHAP, plant extract, green synthesis, spectroscopy, anti-microbial properties*