HYDROXYAPATITE NANOPARTICLES: A REVIEW OF THEIR EMERGING ROLE IN DRUG DELIVERY APPLICATIONS

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REVIEW

Abstract. This literature review assesses existing research on hydroxyapatite-based drug delivery systems, with a focus on evaluating their effectiveness. Researchers are actively exploring strategies to enhance drug loading capacity, involving surface modifications of nanoparticles and the innovation of novel drug encapsulation techniques. Elevating drug loading has the potential to clearly increase the therapeutic efficacy of these systems. Stability issues also present a challenge in the clinical translation of nanoparticle-based drug delivery systems. Furthermore, scientists are underway to minimize potential side effects by judiciously selecting biocompatible materials for nanoparticle synthesis and conducting comprehensive toxicity studies before advancing to clinical trials.

Keywords: hydroxyapatite (HAp), targeted drug delivery
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1. Introduction

Hydroxyapatite (HAp), a widely recognized biomaterial, has experienced significant evolution, from a simple biocompatible material to an advanced...