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Exploring the Use of Ferrite Nanoparticles Drug Carriers for Targeted Magnetic Hyperthermia Cancer Therapy

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Abstract: *The application of nanotechnology in medicine has opened new avenues for the diagnosis and treatment of various diseases, including cancer. Among the promising nanomaterials, ferrite nanoparticles have gained significant attention due to their unique magnetic properties and biocompatibility. In this research article, we delve into the potential of ferrite nanoparticles as drug carriers for targeted magnetic hyperthermia cancer therapy. We discuss the synthesis methods of ferrite nanoparticles, their surface modification for drug loading, and their use in conjunction with magnetic hyperthermia to selectively heat and eradicate cancer cells. Furthermore, we explore the current challenges and future perspectives in utilizing ferrite nanoparticles for cancer therapy.*

Keywords: Ferrite nanoparticles, drug carriers, magnetic hyperthermia, cancer therapy, targeted delivery.