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A Review on Phytopharmaceutics Profile of Cyperus Rotundus; A Natural Excipient and Bioenhancer in Modern Drug Delivery Systems

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Abstract: *Historically valued for its therapeutic qualities, Cyperus rotundus is now more widely acknowledged in contemporary pharmaceutics as a natural excipient and bioenhancer. Its functional role in improving drug stability, solubility, and permeation is supported by its rich phytochemical profile, which includes sesquiterpenes, flavonoids, alkaloids, and essential oils. Cyperus rotundus, a naturally occurring excipient, helps to improve formulation properties in topical, transdermal, and nanocarrier systems, allowing for the controlled and prolonged release of active ingredients. Its inherent bioactivity acts as an efficient bioenhancer by modifying enzymatic pathways and membrane permeability, which further increases drug bioavailability. The plant is useful for wound healing, skin care, and certain drug delivery applications because of its antimicrobial, anti-inflammatory, and antioxidant qualities. The plant is useful for wound healing, skin care, and certain drug delivery applications because of its antimicrobial, anti-inflammatory, and antioxidant qualities. Recent developments include incorporation into hydrogels, liposomes, and nanoparticles—nanostructured systems that maximize drug penetration and therapeutic efficacy. This integration not only enhances the efficacy of existing medications but also paves the way for innovative treatment options that align with modern healthcare demands. As research continues to unveil the diverse applications of Cyperus rotundus, it could very well transform the future of integrative medicine.*

Keywords: Cyperus rotundus, natural excipient, bioenhancer, drug delivery systems, phytopharmaceutical, Herbal formulation

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