

Waste-Grass-Mediated Green Synthesis of Silver Nanoparticles and Evaluation of Their Anticancer, Antifungal, and Antibacterial Activity: A Review

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Abstract: Silver nanoparticles (AgNPs) have gained significant attention due to their diverse biomedical and environmental applications. Green synthesis using plant-based materials provides a sustainable and eco-friendly alternative to conventional chemical methods. Waste grass, an abundant and underutilized biomass, has emerged as an efficient reducing and stabilizing agent in the synthesis of AgNPs. This review comprehensively discusses the role of waste grass in the green synthesis of AgNPs, their physicochemical characteristics, and their potential applications in anticancer, antifungal, and antibacterial therapies. The biosynthesized AgNPs exhibit remarkable biological activities, making them promising candidates for future biomedical applications. The review also highlights the mechanistic aspects of their therapeutic properties, challenges in their development, and future perspectives for large-scale applications

Keywords: Silver nanoparticles, green synthesis, waste grass, antimicrobial activity, anticancer properties, nanobiotechnology, eco-friendly synthesis

