FORMULATION AND EVALUATION OF *ARDISIA CRENATA* GREEN SYNTHESIZED PLANT-BASED SILVER NANOPARTICLES USING DESIGN-EXPERT SOFTWARE: THERAPEUTIC PROSPECTIVE FOR ANTICANCER

ABSTRACT

Silver nanoparticles (AgNPs) synthesized using green methods, particularly utilizing plant extracts, have emerged as promising candidates for anticancer therapy. This paper presents the formulation and comprehensive evaluation of green synthesized plant-based silver nanoparticles for their therapeutic potential in cancer treatment. The green synthesis approach offers advantages such as eco-friendliness, cost-effectiveness and scalability, making it an attractive option for nanoparticle synthesis. During the synthesis process, plant extracts act as reducing and stabilizing agents, leading to the creation of biocompatible nanoparticles with improved anticancer capabilities. The formulation process involves optimizing synthesis parameters such as extract concentration, reaction time and temperature to achieve nanoparticles with desirable characteristics. The results show that these nanoparticles effectively inhibit cancer cell growth, trigger apoptosis and reduce tumor development. Overall, the formulation and evaluation of green synthesized plant-based silver nanoparticles offer promising insights into their therapeutic prospective for anticancer applications, highlighting their potential as novel and sustainable nanotherapeutics in the fight against cancer.