

عنوان مقاله:

Recent advances in biological mediated cancer research using silver nanoparticles as a promising strategy for hepatic cancer therapeutics: a systematic review

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خلاصه مقاله:

Nanoparticles are of highlighted interest in scientific research for a wide range of applications as they bridge the gap between atomic structures and bulk materials with unique physicochemical properties. This systematic review was aimed to study the current trends in biological mediated cancer research using biogenic silver nanoparticles (AgNPs) against hepatic cancer cell lines. For this purpose, the electronic databases including Cochrane Library, PubMed, Scopus, Science Direct, ProQuest, Embase, and Web of Science were searched. Forty-six studies passed the eligibility assessments and entered into the current study. All of the studies stated the size distribution of biosynthesized AgNPs below 100 nm with different shapes. Whereas, most studies stated spherical morphology for biogenic AgNPs. Most of the studies (91.30%) represented significant anticancer activity of biogenic AgNPs toward hepatic cancer cell lines. The molecular mechanisms also showed the induction of intracellular Reactive Oxygen Species (ROS) and apoptosis through the biogenic AgNPs-treated hepatic cancer cells. The AgNPs-mediated induction of intracellular ROS overgeneration and ATP synthesis interruption disturb the mitochondria respiratory chain function resulting in the induction of mitochondrial pathway apoptosis. Overall, this systematic review provided strong preliminary evidence representing the efficacy of biogenic AgNPs to combat hepatic cancer cells through in vitro models.

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