

عنوان مقاله:

Synthesis of silver nanoparticles and hybridization with Bovine serum albumin nanoparticles as a nanocarrier for quercetin and investigation of its anticancer effects on ۴T۱ cell line

محل انتشار:

پنجمین کنگره بین المللی سرطان (سال: 1400)

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خلاصه مقاله:

Introduction:In women, breast cancer is the most commonly diagnosed cancer and the leading cause of cancer death. The anti-cancer effects of quercetin (Que) such as cellular signaling, apoptosis, anti-proliferation, anti-oxidant and growth suppression have been reported by several studies. On the other hand, treatment with anti-cancer nanodrugs causes the drug to accumulate in tumor tissue, minimizing drug interactions in off-target tissue, ameliorating direct effects, and inhibiting indirect effects and side effects. Silver nanoparticles have attracted a considerable interest in the field of cancer research due to their potential utility in cancer therapy.
Materials and Methods:In the present study, we developed Ag NPs hybrid with BSA Nps (Ag@BSA NPs) and characterized in vitro therapeutic activities of this NPs for the treatment of breast cancer. Ag@BSA NPs were synthesized by a single-step reduction process, and the successful preparation was verified through a list of physical characterizations, including SEM, EDX, UV spectroscopy and DLS. These Ag@BSA@QUE NPs also demonstrated sustained release of QUE at ۳۷ °C in different buffer solutions.
Results:The Ag@BSA@QUE NPs showed significant anti-cancer effects on ۴T۱ cells. These NPs decreased cell proliferation as well as increased apoptosis, which may have been caused by oxidative stress.
Conclusion:It can be concluded that Ag@BSA@QUE NPs could potentially suppress the cancerous properties of ۴T۱ cells and the presented nanocarrier system can be a promising approach for targeted drug delivery in cancer treatment

کلمات کلیدی:

Ag@BSA NPs, Drug Delivery, Quercetin, ۴T۱ Cell Line

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