

عنوان مقاله:

Effect of Coronopilin-loaded NIPAAm-MAA nanoparticle on T47D cell line

محل انتشار:

نهمین کنگره بین المللی سرطان پستان (سال: 1392)

تعداد صفحات اصل مقاله: 1

نویسندگان:

Vahideh Zeighamian - *Dep. of Medical Biotechnology, School of Advanced Medical Sciences, Tabriz University of Medical Sciences, Tabriz, Iran*

Amirbahman Rahimzadeh - *Dep. of Medical Hematology, School of Medical Sciences, Tabriz University of Medical Sciences, Tabriz, Iran*

Fatemeh Sadat Tabatabaei Mirakabad - *Dep. of Medical Biotechnology, School of Advanced Medical Sciences, Tabriz University of Medical Sciences, Tabriz, Iran*

Mohammad Rahmati - *Dep. of Medical Biotechnology, School of Advanced Medical Sciences, Tabriz University of Medical Sciences, Tabriz, Iran*

خلاصه مقاله:

Cancer is defined as an uncontrolled proliferation of clonally derived cells. Breast cancer in women is a major public health problem throughout the world. Global breast cancer incidence increased from 641 000 (95% uncertainty intervals 610 000—750 000) cases in 1980 to 1 643 000 (1 421 000—1 782 000) cases in 2010, an annual rate of increase of 3.1%. In the quest for novel preventive and therapeutic cancer agents, natural products have received increasing attention in recent years. Plant-derived components such as coronopilin - a sesquiterpene lactone - hold promise to treat a variety of cancers. On the other hand, Prior studies suggested that nanoparticle drug delivery might improve the therapeutic response to anticancer drugs. Poly (N-isopropylacrylamide-co-methacrylic acid) (PNIPAAm-MAA) is cross-linked polymeric nanoparticle. It is one of nanoparticles utilized in the drug delivery system for cancer therapy. The purpose of this study was to investigate anti-cancer potential of Coronopilin-loaded NIPAAm-MAA nanoparticle on T47D breast cancer cell line. Materials and methods: We have synthesized polymeric nanoparticle encapsulated formulation of coronopilin utilizing the micellar aggregates of cross-linked NIPAAm-MAA. Cell survival rate and cytotoxic effect of Coronopilin-loaded NIPAAm-MAA nanoparticles on T47D breast cancer cell line were measured using 48h MTT assay. Results: Data analysis and evaluation of results showed that coronopilin-loaded NIPAAm-MAA nanoparticles has cytotoxic effect on T47D breast cancer cell line and efficiently inhibit ($IC_{50} = 32 \mu g/ml$) growth of breast cancer cell population. Conclusions: This study indicates that coronopilin-loaded NIPAAm-MAA suppresses the growth of human breast cancer cells. The treatment of T47D cells with coronopilin-loaded NIPAAm-MAA results in significant cell growth inhibition. Therefore nanocoronopilin opens up avenues for systemic therapy of breast cancer and the other human cancers

کلمات کلیدی:

Breast cancer, Coronopilin, NIPAAm-MAA, drug delivery

