Postgraduate management

Faculty of Basic Sciences

Biology Department

Thesis to obtain a master's degree in genetics

Titel :

Anticancer Activity of Tamoxifen Loaded Biocompatible Cu/Fe3O4@Sio2 Nanoparticles in the mammary gland epithelial (MCF-7) breast cancer cell line

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February 2022

Abstract

Their descent is one of the most common stories in Renan, with my junction and mystery over it, including the first and more female. 70 % of your cancers and cancers are in the meremia. Estrigerations are one of the mainstreams in the forefront. The ERα estrogen receptors in the transcription of the work. The subject of our research is the most commonly positive ER-A-a-a-a-a-a-a-a-a-a-a-a-a-a-positive Extra-A-A-A-A-A-A-NEU breast cancer. These types of cancers, which account for about 85 % of the diagnosed breast cancers, are usually affected by internal estrogen (secreted from the body's glands) or external (prescription oral pregnancy and hormone therapy). Most of these cancers are treated with tamoxifen, with 5 -year treatment with tamoxifen reduced the annual breast cancer to 31 %. Unfortunately, tamoxifen resistance and its complications have restricted treatment with this drug. Therefore, it is necessary to provide new strategies to enhance the effect of tamoxifen in tamoxifen -dependent cancers. Since breast cancer is one of the main causes of mortality, especially in Renan, for the first time, the tamoxifen cancer effect loaded with CU/Fe3O4@SiO2 will be examined in human cancer human cells MCF-7.

In this study, the tamoxifen effect loaded with CU/Fe3O4@SiO2 was reviewed as a new therapeutic agent in laboratory conditions in human breast cancer cells MCF-7. After the cultivation of MCF-7 cells, the cells were subjected to tamoxifen and tamoxifen treatment with CU/Fe3O4@SiO2 at different concentrations and periods of 24, 48 and 72 hours. The results of MTT showed that tamoxifen and tamoxifen loaded with nanoparticles CU/Fe3O4@SiO2 depending on time and concentration, inhibiting the proliferation of MCF-7 cells within 48 hours. On the other hand, to investigate the impact of tamoxifen and tamoxifen loaded with nanoparticles CU/Fe3O4@SiO2 on the expression of anchogenic genes and tumor repressive genes, the expression of P53, MDM4 and MDM2 genes was investigated, so after extraction RNA was evaluated by the RNA extraction kit and CDNA, expression of P53, MDM4 and MDM2 genes by Real Time PCR. In this study, the morphological changes of MCF-7 cells were treated with tamoxifen and tamoxifen loaded with CU/Fe3O4@SiO2 by Hochcest with microscopy, and the results showed that cell cytoplasm The nucleus has been observed as a dense, indicating that the cells are moving toward apoptosis.

Keywords: Breast Cancer, Tamoxifen, CU/Fe3O4 Nanoparticles@SiO2, Apoptosis, P53, MDM4, MDM2