

عنوان مقاله:

Fluorouracil-Loaded PLGA Declined Expression of Pro-Inflammatory Genes IL- α , IL- γ , IL- β and IFN- γ in the HT- 29 Colon Cancer Cell Line- δ

محل انتشار:

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خلاصه مقاله:

Background: Pro-inflammatory cytokines play critical roles in cancer pathobiology and have been considered potential targets for cancer management and therapy. Understanding the impact of cancer therapeutics such as δ -fluorouracil (δ -FU) on their expression might shed light on development of novel combinational therapies. This study aimed to encapsulate δ -FU into PLGA and evaluate their effects on the expression of pro-inflammatory genes IL- α , IL- γ , IL- β , and IFN- γ in the HT- 29 cells. Methods: PLGA- δ -FU NPs were constructed and characterized by Dynamic Light Scattering (DLS) and Atomic Force Microscopy (AFM). The cytotoxicity was evaluated by MTT test and, the IC $_{50}$ was identified. HT- 29 cells were treated with different concentrations of the PLGA- δ -FU NPs for 48 hours and, gene expression levels were analyzed by qRT-PCR. Results: DLS and AFM analysis revealed that the prepared PLGA- δ -FU NPs were negatively charged spherical-shaped particles with a mean size of 215.9 ± 43.3 nm. PLGA- δ -FU NPs impacted the viability of HT- 29 cells in a dose- and time-dependent manner. The qRT-PCR results revealed a dose-dependent decrease in the expression of IL- α , IL- γ , IL- β and IFN- γ genes, and their expressions were significantly different in both 10 and 20 μ g/mL treated groups compared to the control. However, although the treatment of HT- 29 cells with 20 μ g/mL free δ -FU resulted in decreased expression of the studied genes, the differences were not statistically significant compared to the control group. Conclusions: PLGA- δ -FU NPs significantly suppressed expression of the IL- α , IL- γ , IL- β and IFN- γ genes, and the encapsulation of δ -FU into PLGA improved considerably impact of the δ -FU on the HT- 29 cells

کلمات کلیدی:

.Cancer therapy, Colorectal cancer, Fluorouracil, Poly(lactic Acid-Polyglycolic Acid Copolymer (PLGA), Pro-inflammatory cytokine

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