

عنوان مقاله:

Inhibition of hTERT Gene Expression by Silibinin-Loaded PLGA-PEG-Fe₃O₄ in T47D Breast Cancer Cell Line

محل انتشار:

یازدهمین کنگره بین المللی سرطان پستان (سال: 1394)

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خلاصه مقاله:

Introduction: Nowadays, using drug delivery is an essential method to improve cancer therapy through decreasing drug toxicity and increasing efficiency of treatment. Silibinin (C₂₅H₂₂O₁₀), a polyphenolic flavonoid which is isolated from the milk thistle plant, has various applications in cancer therapy but it has hydrophobic structure with low water solubility and bioavailability. To increase the effect of silibinin, silibinin-loaded PLGA-PEG-Fe₃O₄ was prepared to determine the inhibitory effect of this nanodrug on Telomerase gene expression. **Methods:** The rate of silibinin loaded into PLGA-PEG-Fe₃O₄ was measured. Then, the cytotoxic effect of silibinin-loaded PLGA-PEG-Fe₃O₄ was determined by Methyl Thiazol Tetrazolium (MTT) assay. After that, inhibition of Telomerase gene expression was indicated through Real-time PCR. **Results:**Data analysis from MTT assay showed that silibinin-loaded PLGA-PEGFe₃O₄ had dose dependent cytotoxic effect on T47D cell line. MTT assay showed no cytotoxic effect of free PLGA-PEG-Fe₃O₄ on T47D breast cancer cell line. Real Time PCR analysis showed that the level of telomerase gene expression more efficiently decreased with silibinin-loaded PLGA-PEGFe₃O₄ than with free silibinin alone. **Conclusion:** The present study indicates that this nanodrug causes down-regulation of Telomerase gene expression in cancer cells. Therefore, PLGA-PEG-Fe₃O₄ could be an appropriate carrier for hydrophobic agents such as silibinin to improve their action in cancer therapy.

کلمات کلیدی:

Telomerase, Breast Cancer, Silibinin, PLGA-PEG-Fe₃O₄

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