



Auraptene Enhances Cytotoxicity of Vincristine in Colon Carcinoma Cells

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Abstract

Colorectal carcinoma (CRC) is one of the most common malignancies worldwide. In our country Iran, colon carcinoma has been reported as the fifth and fourth frequent cancer among men and women. Despite advances in cancer therapy, CRC patients still suffer from cancer recurrence and metastasis. In current study, synergic effect of auraptene, a natural coumarin derivative, on vincristine cytotoxicity has been investigated in HT-29 cells, a human colon carcinoma cell line. Auraptene was synthesized by a reaction between 7-hydroxycoumarin and transgeranyl bromide in acetone at room temperature and then purified by column chromatography. IC₅₀ of vincristine was determined on HT-29 cells, a human colon carcinoma cell line, by thiazolyl blue tetrazolium bromide. Then, to examine auraptene effect on vincristine cytotoxicity, HT-29 cells were treated with various combining concentrations, including 20 µg/ml auraptene with 2.5, 5 and 10 µg/ml vincristine. Results of MTT test revealed that combination of 20 µg/ml auraptene with 1 µg/ml vincristine increased the toxicity of drug by 13%. Since non-toxic concentration of auraptene increases the cytotoxicity of vincristine, this coumarin could be considered as a suitable candidate for future *in vivo* and clinical studies.

Key words: Auraptene, HT-29 cells, Vincristine, Synergic effect