

The Effect of *Achillea wilhelmsii* extract on expression of the human Telomerase Reverse Transcriptase (hTERT) mRNA in prostate cancer PC3 cell line

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Abstract

Evidence showed that Human telomerase reverse transcriptase (hTERT) was overexpressed in prostate cancer. *Achillea wilhelmsii* (AW) is a plant that has been traditionally used for its medicinal properties. The aim of current study is evaluation the effects of AW extract on a prostate cancer cell line

Methods: The cytotoxic activity of the hydroalcoholic extract of AW was studied on prostate cancer PC3 cell line using MTT assay. Flow cytometry was used to evaluate the effects of the extract on the apoptosis. The expression of hTERT mRNA was analyzed by Real-Time PCR method. ELISA method was used to measure the levels of telomerase enzyme.

The hydroalcoholic AW extract showed the appropriate inhibitory effect in 150 μ g/ml concentration (IC50) on PC3 cell line after 48h treatment. Treatment of the PC3 cells with AW resulted in a significant increase in early and late apoptotic cells in a dose-dependent manner. Moreover, the early apoptotic cells were significantly higher than late apoptotic cells. The h-TERT mRNA expression was decreased after 24h treatment of AW extract, though it was not different between 2, 4, 8 and 12 h treatments or 24, 48 and 72h treatments. Also, the h-TERT concentration was significantly decreased after 24h treatment of AW extract.

The hydroalcoholic extract of AW induced potent antiproliferative and apoptotic effects in PC3 cell line, which could be explainable by its high potency to inhibit expression of the prominent oncogene hTERT in prostate cancer.

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Biography

Hosniyeh Amini has completed his Master at the age of 27 years from Tehran. She study about effect of drugs in cancer and mental.