Abstract

Colchicine is an alkaloid that has been widely used to treat gout. This alkaloid exerts anti-proliferative effects on malignant tumors and inhibits their metastasis. Colchicine activates intrinsic pathway of apoptosis to induce cell death. Bax and Bcl2 genes are among key target genes of internal pathway; thus the present study aims to determine the effect of colchicin on the expression of these two genes on pc3 cell line (prostate cancer). After the cell line was properly cultured, cells were treated with different concentration of colchicine and the proliferative inhibitory effect of this molecule was assayed using MTT method. Afterwards, the RNA content of cells was extracted using an RNA extraction kit. Then the cDNA was synthesized for Bax and Bcl2 genes and finally Real time PCR was run. MTT resulte approved the inhibitory effect of colchicine wilde the results frome Real time PCR cleared out a drastic increase in the expression of pro-apoptotic gene of Bax in comparison to controls not treated withe colchicine. On the other hand, the expression of anti-apoptotic gene of Bcl2 was significantly decreased compared to control. Altogether, it could be concluded that colchicine is abale to induce apoptosis by affecting genes involved in this pathway such as Bax and Bcl2 therefore inhibit cancer cell growth and metastasis.

Keywords: colchicine, PC3, Apoptosis, Bcl-2, Bax

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