

عنوان مقاله:

Berberine suppresses migration of MCF-7 breast cancer cells through down-regulation of chemokine receptors

محل انتشار:

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خلاصه مقاله:

Objective(s): Berberine is one of the main alkaloids and it has been proven to have different pharmacological effects including inhibition of cell cycle and progression of apoptosis in various cancerous cells; however, its effects on cancer metastasis are not well known. Cancer cells obtain the ability to change their chemokine system and convert into metastatic cells. In this study, we examined the effect of berberine on breast cancer cell migration and its probable interaction with the chemokine system in cancer cells. Materials and Methods: The MCF-7 breast cancer cell line was cultured, and then, treated with berberine (10, 20, 40 and 80 µg/ml) for 24 hr. MTT assay was used in order to determine the cytotoxic effect of berberine on MCF-7 breast cancer cells. Wound healing assay was applied to determine the inhibitory effect of berberine on cell migration. Moreover, real-time quantitative PCR analysis of selected chemokine receptors was performed to determine the probable molecular mechanism underlying the effect of berberine on breast cancer cell migration. Results: The results of wound healing assay revealed that berberine decreases cell migration. Moreover, we found that the mRNA levels of some chemokine receptors were reduced after berberine treatment, and this may be the underlying mechanism for decreased cell migration. Conclusion: Our results indicate that berberine might be a potential preventive biofactor for human breast cancer metastasis by targeting chemokine receptor genes.

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