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Evaluation the Cytotoxicity of an Oscillatoria sp. extract on breast cancer cell line (mcf-7) and assessment of noxa gene expressionAli Salehzadeh¹, Akram Sadat Naeemi²¹Islamic Azad University, Iran²University of Guilan, Iran

Introduction: Breast cancer is the most common cancer and the second leading cause of cancer death in women after lung cancer. Cyanobacteria are one of marine resources that have some effective compounds such as polyphenols compounds that can induce the process of cell death in cancer cells and might be promising candidate for cancer therapy. In the present study, the effect of an Oscillatoria cyanobacterium extract on the viability and expression of noxA gene in breast cancer MCF-7 cell line was examined.

Material and methods: Breast cancer cell line was treated with 1.56, 3.12, 6.25, 12.5, 25 and 50 mg/mL of the extract of an Oscillatoria sp. The effect of these concentrations on the viability of cells was evaluated by MTT assay. The expression of noxA gene was checked by Real Time PCR under IC50 concentration.

Results: The cell viability was reduced in the presence of increasing concentration of the extract with significant difference in comparison with control samples. Also the results of Real Time PCR showed that the expression of noxA significantly increased [33.9 (p<0.001)] after 24-h in comparison with the control group.

Conclusion: The crude extract of Oscillatoria that have some polyphenols compounds proved to be cytotoxic against breast cancer cells.

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