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Assessment of Sox-2 gene expression in female Balb/c breast cancer tissue treated with phycocyanin *Anabaena* cyanobacteria (*Anabaena* sp.ISC55) by RT-PCR

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Useful common methods to investigate breast cancer are cellular and molecular studies. Sox-2 plays an important role in the activation and differentiation of stem cells and initiative genes, the expression of this gene in breast cancer is observed. For the first time we could examine SOX-2 gene expression in cancer tissues of mice treated with phycocyanin from *Anabaena.sp.ISC55* cyanobacteria. In this study, 50 female Balb/c mice were used to induce breast cancer. After cultivating cyanobacteria in the culture medium BG11, phycocyanin extracted from *Anabaena.sp.ISC55* cyanobacteria were isolated and after controlling doses with spectrophotometer (UV-VIS), subsequently the doses of 10 and 150 µl in experimental groups were selected. After completing periods of 21 days injections, RNA extraction carried out from tissue and subsequently cDNA were synthesized and finally Sox-2 gene expression was determined by RT-PCR technique. Finally, results were analyzed by SPSS-16 and Image j softwares. Analysis of the results demonstrated that dose of 150 ml phycocyanin has inhibitory effect on Sox-2 gene expression in breast cancer cells. These findings indicate that phycocyanin from *Anabaena sp.ISC55* cyanobacteria could have antitumor effects and could use as a therapeutic agent in treatment of breast cancer.

Biography

Farnaz Dabbagh Moghaddam completed her Bachelor's degree of Science in General Biology from Parand Azad University in 2011; and after that she pursued her MSc in Developmental Biology, achieving the best grades. Her interest area is about cellular and molecular studies in breast cancer.

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