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IN-VIVO AND *IN-VITRO* IMPACT OF miR-21 AND miR-126 IN THE SUPPRESSION OF METASTASIS AND INVASION IN BREAST CANCER

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The aim of this study was to investigate the effect of miRNA-21 and miRNA-126 inhibition on metastasis and invasion in both MDA-MB231, MDA-MB468 as well as the MCF-7 breast cancer cell lines and five week old female C57BL/6 mice. Following the cloning of miRNA-21 and miRNA-126 into vectors, their expressions were determined before treatment with constructs of miR-21 and miR-126 in cancer cell lines and normal breast cells. Then miRNA-21 and miRNA-126 were transfected to the cell-lines and the expression was assessed after 48 hours. Moreover, levels of migration and invasion were determined in cell-lines. These experiments performed in five-week old female C57BL/6 mice. The results showed that miRNA-21 expression before the transfection of miRNA-21 construct was decreased 4, 70 and 100 times in MCF-7, MDA-MB468 and MDA-MB231 cell lines, respectively, in comparison to normal breast cells; but after the transfection of miR-21 construct, expression of miRNA-21 was increased 100 times. Furthermore, invasion and migration decreased by 15 and 10 times in MDAMB-468. All modifications in miRNA-126 were low in comparison to miRNA-21. The results of the *in vivo* experiments were approximately the same as *in vitro* experiments. It suggests that the use of miRNA-21 is highly efficient than miRNA-126 in the inhibition of metastasis and invasion in breast cancer. Our study enhanced our conception about miR-21 and miR-126 and its roles in identification and therapy of breast cancer.

BIOGRAPHY

Sina Taefehshokr is a self-motivated, dedicated and first top DVM student in the faculty with solid background in Cell Biology, Oncology and Immunology research. She has published more than 15 papers both in Farsi and English in several journals. She had six both oral and poster presentations in international and national conferences. She can implement several research skills including Immunology, Molecular Biology, Tumor, Protein, Histology and Animal Handling Techniques. She has worked as a Lab Demonstrator/Teaching Assistant and Honorary Research Assistant at Stem Cell and Regenerative Medicine Institute, Tabriz University of Medical Sciences.

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