

Effects of Transfection of GPIb Alpha on Invasion and Metastasis in Breast Cancer Cells

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Abstract

Background Breast cancer has become an important disease that threatens the life and health of women all over the world because of its increasing incidence and mortality, and the main factor that affects its prognosis is invasion and metastasis. Platelet membrane glycoprotein Ib alpha (GPIb α) is a key adhesion factor expressed on platelet membrane, we further studied the effect of ectopic expression of GPIb α on invasion and metastasis of breast cancer in human breast cancer cell line. *Objective* To study the effects of transfection of GPIb alpha on invasion and metastasis in breast cancer cells. *Methods* Transient cell transfection was used to study the ectopic expression of GPIb α in MDA-MB-231 cells and T47D cells. Transfection efficiency was confirmed by measuring the expression of GPIb α using western blotting assay and real-time fluorescence quantitative reverse transcription-polymerase chain reaction analysis. *Results* Our results showed that MDA-MB-231 GPIb α stable low expression cell line and T47D GPIb α stable high expression cell line was successfully constructed. The expression of GPIb α in T47D stable high expression group was about 4.75 times that of the control group, and the expression of GPIb α in MDA-MB-231 stable low expression group was about 2.08 times that of the control group. Overexpression for GPIb α in T47D cells promoted the migration and invasion ability of breast cancer cells in vitro, while SiRNA transfection for GPIb α in MDA-MB-231 cells possessed the opposite inhibitory effect. *Conclusion* We conclude that elevating the ectopic expression of GPIb α could promote the invasion and metastasis of breast cancer cells.

Keywords

Breast Cancer, GPIb α , Transfection, Metastasis

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