

Caveolin-1-containing extracellular vesicles transport adhesion proteins and promote malignancy in breast cancer cell lines

Campos, America

Salomon, Carlos

Bustos, Rocio

Díaz, Jorge

Martínez, Samuel

Silva, Veronica

Reyes, Constanza

Díaz-Valdivia, Natalia

Varas-Godoy, Manuel

Lobos-González, Lorena

Quest, Andrew Fg

© 2018 2018 Future Medicine Ltd. Breast cancer is one of the most frequently diagnosed cancers and the leading cause of cancer-related deaths in women worldwide, whereby mortality is largely attributable to the development of distant metastasis. Caveolin-1 (CAV1) is a multifunctional membrane protein that is typically upregulated in the final stages of cancer and promotes migration and invasion of tumor cells. Elevated levels of CAV1 have been detected in extracellular vesicles (EVs) from advanced cancer patients. EVs are lipid enclosed vesicular structures that contain bioactive proteins, DNA and RNAs, which can be transferred to other cells and promote metastasis. Therefore, we hypothesized that CAV1 containing EVs released from breast cancer cells may enhance migration and invasion of recipient cells. EVs were purified from conditioned media of MDA-MB-231 wild-type (WT), MDA-MB-231 (shCAV1; possessing the plasmid pLKO.1 encoding a 'small hairpin' directed against CAV1) and MDA-MB-23