

Up-Regulation of SCUBE2 Expression in Co-Cultures of Human Mesenchymal Stem Cell and Breast Cancer Cells

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Abstract : Stem cell has been known for its potency to be differentiated in many cells. Recently stem cell has been used for many treatment of degenerative medicine. It is still controversy whether stem cell can be used for therapy or these cells can activate cancer stem cell. SCUBE2 is a novel secreted and membrane-anchored protein which has been reported to its role in better prognosis and inhibition of cancer cell proliferation. Our study aims to observe whether stem cell can up-regulate SCUBE2 gene in MCF7 breast cancer cell line. We used in vitro study using MCF-7 cell treated with stem cell derived from placenta Wharton's jelly which has been known for its stemness and widely used. Our results showed that MCF-7 cell line grows up rapidly in 6-well culture dish. Stem cell was cultured in 6-well dish. After 50%-60% MCF-7 confluence, we co-cultured these cells with stem cells for 24 hours and 48 hours. We hypothesize SCUBE2 gene which is previously known for its higher expression in better prognosis of breast cancer, is up-regulated after stem cells addition in MCF7 culture dishes.

Keywords : breast cancer cells, inhibition of cancer cells, mesenchymal stem cells, SCUBE2

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