Transcription Factor VGLL4 as Breast Cancer Suppressor

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Purpose of the Experiment Breast cancer is one of the most common malignant diseases. Of the five types of existing breast cancer, the basal like tumors we examined are the most aggressive and cause death within the shortest time. This type of cancer still has no specific treatment. Previous studies showed that VGLL4 suppresses liver cancer in a mouse model and gastric cancer in human tissue culture by influencing the Hippo pathway which controls tissue growth, proliferation and apoptosis. The aim of the present study was to examine the potential of VGLL4 overexpression as a tumor suppressant in human breast cancer cells. Procedures Used Real Time PCR was employed to examine the expression levels of eleven genes in the Hippo pathway within cultured breast cancer cells after overexpression of VGLL4. The breast cancer cells were basal like tumor cells (hcc70 cell line). Four out of the eleven genes were transcription factors and seven were target genes, which are activated by the transcription factors. Observation/Data/Results VGLL4 suppressed five out of the seven target genes that were tested. Interestingly, VGLL4 overexpression did not significantly suppress transcription factor expression. This suggests that the suppression effect of VGLL4 on the target genes expression levels is direct and not mediated by a suppression of the transcription factors. Conclusions/Applications Future refinement of this study may contribute to the development of a specific treatment for basal-like breast cancer as a potential alternative to chemotherapy, facilitating targeted and efficient therapy without peripheral damage. Through its effect on the Hippo pathwa