OMICS Group Conferences
Accelerating Scientific Discovery

International Conference & Exhibition on
Cell Science & Stem Cell Research

29 Nov - 1 Dec 2011 Philadelphia Airport Marriott, USA

Evaluation of cyclin dependent kinase like 1 expression in breast cancer and regulation in cancer cell growth

Feng Yan[1], Li Tang[1], Yanfang Gao[1], Xinyu Xu[3] and Jinhai Tang[2]

[1]Department of Clinical Laboratory, Jiangsu Cancer Hospital, P.R. China
[2]Department of Surgery, Jiangsu Cancer Hospital, P.R. China
[3]Department of Pathology, Jiangsu Cancer Hospital, P.R. China

Background: Cyclin dependent kinase like 1 (CDKL1) is a member of cell division control protein 2 (CDC2), plays an important impact on the progress. This study aimed to evaluate the related serine/threonine protein kinases family, and it is likely to occur in malignant tumors expression of CDKL1 in breast cancer and regulation in cancer cell growth.

Methods: We investigated both the CDKL1 mRNA level in fresh biopsy tissues from 62 breast cancer patients and 20 benign tissues by real-time PCR, and CDKL1 protein in 20 paraffin-embedded tissues from primary breast cancer patients by immunohistochemistry. The roles of CDKL1 in cell growth were analyzed with CDKL1 shRNA inhibitor-transfected cells.

Results: CDKL1 was overexpressed in patients with breast cancer. CDKL1 provided a positive detection efficiency of 89%, which was significant higher than that of 44% by estrogen receptor and 27% by progesterone receptor ($P<0.001$). CDKL1 shRNA inhibitor-transfected cells exhibited obvious accumulation at G2/M phase and reduced cell growth when treated with the chemotherapeutic drugs.

Conclusion: Both the CDKL1 level and its behavior in shRNA interference suggested that CDKL1 could be potentially developed as a tumor assistant marker for diagnosis and as a potential therapeutic target for breast cancer.