論 文 要 旨

PCP4/PEP19 Upregulates Aromatase Gene Expression via CYP19A1 Promoter I.1 in Human Breast Cancer SK-BR-3 Cells

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The Purkinje cell protein 4/peptide 19 (PCP4/PEP19) is a novel breast cancer cell expressing peptide, originally found in the neural cells as an anti-apoptotic factor, could inhibit cell apoptosis and enhance cell migration and invasion in human breast cancer cell lines. The expression of PCP4/PEP19 is induced by estrogens in estrogen receptor-positive (ER+) MCF-7 cells but also highly expressed in ER- SK-BR-3 cells. In this study, we investigated the effects of PCP4/PEP19 on aromatase gene expression in MCF-7 and SK-BR-3 human breast cancer cells. In SK-BR-3 cells but not in MCF-7 cells, PCP4/PEP19 knockdown by siRNA silencing decreased the aromatase expression in gene transcriptional level. When PCP4/PEP19 was overexpressed by CMV promoterdriven PCP4/PEP19 expressing plasmid transfection, aromatase gene transcription increased in SK-BR-3 cells. This aromatase gene transcription is mainly mediated through promoter region PI.1, which is usually active in the placental tissue but not in the breast cancer tissue. These results indicate a new function of PCP4/PEP19 that would enhance aromatase gene upregulation to supply estrogens in heterogeneous cancer microenvironment.