[BIOINFO 2023]

STK6: a novel therapeutic target for incurable breast cancers

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One of the most occurring cancers in women is breast cancer. Tamoxifen is the first-line treatment for breast cancer patients. However, tamoxifen-resistance occurs in one-third of patients who were treated. Serine/threonine-protein kinase 6 (STK6) is a master regulator of cell cycle. STK6 has been reported as a therapeutic target in triple-negative breast cancer (TNBC), a type of incurable breast cancer. Here we report that STK6 was overexpressed in tamoxifen-resistant MCF-7 (TAMR-MCF-7). Alisertib (MLN8237) is a selective STK6 inhibitor that inhibits the activity of STK6 in an ATP-competitive manner. Our in vitro studies revealed that cell proliferation inhibition through Alisertib was more sensitive in incurable breast cancer cells, than the parental MCF-7 cells. Our results propose that STK6 represents a novel target for tamoxifen-resistant breast cancer therapy.