

Knockdown of the c-Jun-N-terminal kinase expression by siRNA inhibits MCF-7 breast carcinoma cell line growth

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We have examined the effect of two small interference RNA against Jnk-1 and Jnk-2 in the breast cancer cell line MCF-7. The expression of the JNK-1 and JNK-2 is frequently elevated in breast cancer and is a frequent genetic abnormality in this malignancy. For a better understanding of its role in maintaining the malignant phenotype, we used small RNA interference (siRNA) directed against Jnk-1 or Jnk-2. We made control and Jnk-1 and Jnk-2 siRNA using vector plasmid, which was then transfected to reduce its expression in MCF-7 cells. We assessed the effects of JNK-1 or JNK-2 silencing on cell growth by Western blot analysis, soft agar assay, cell proliferation assay, cell viability by MTT assay and caspase assay in vitro. Our data showed that siRNA against Jnk-1 or Jnk-2 markedly and durably reduced its expression in MCF-7 cells by up to 70%, decreased the growth rate of MCF-7 cells, inhibited colony formation in soft agar and significantly reduced cell growth in MCF-7 carcinoma culture