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1: J Neurooncol. 2005 Jan;71(2):121-5.

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SpringerLink FULL-TEXT ARTICLE

Tamoxifen-induced cell death and expression of neurotrophic factors in cultured C6 glioma cells.

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The effects of (Z)-2[p -(1,2-diphenyl-1-butenyl)phenoxy]-N ,N -dimethylamine citrate (tamoxifen) on cell survival and the expression of neurotrophic factors (NTF) were investigated in rat C6 glioma cells (C6). C6 cells do not express the estrogen receptor. Cytotoxic effect was detected from 24 h after the treatment with 10 microM tamoxifen and increased with time in a dose-dependent manner. C6 cells treated with tamoxifen also displayed various morphological types such as elliptical, round and aggregated form. As the treatment time increased, the proliferation of C6 cells was reduced remarkably and most of them became the round or aggregated form.To examine the relationship of the expression of NTF and the cytotoxicity of tamoxifen, the mRNA level of brain-derived neurotrophic factor (BDNF), glial-derived neurotrophic factor (GDNF), and basic fibroblast growth factor (bFGF) was measured after 24 h treatment with tamoxifen by RT-PCR. The expression of mRNA of BDNF or GDNF in C6 cells treated with various concentrations of tamoxifen was comparable to controls. The expression of bFGF mRNA was significantly reduced in C6 cells treated with 10 or 15 microM tamoxifen. The results suggest that tamoxifen exerts cytotoxic effect on estrogen receptor-negative C6 cells through the inhibition of the transcription of bFGF.

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