

论文

TSP-1诱导生长激素腺瘤细胞凋亡的体外研究

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摘要:

目的 探讨TSP-1对生长激素腺瘤细胞生长的影响以及对TGF-β1基因表达的调节作用。方法 本实验采用12例人生长激素腺瘤原代细胞培养进行体外实验研究,通过MTT实验观察TSP-1对细胞生长的影响,并应用流式细胞仪检测TSP-1对生长激素腺瘤细胞的促进凋亡作用;应用RT-PCR方法检测不同浓度TSP-1作用后的TGF-β1基因表达的改变。结果 低浓度(1~5nmol/L)TSP-1在体外作用48h,即可以抑制生长激素腺瘤细胞生长,其作用随剂量和时间的增加而增强;流式细胞术结果显示,TSP-1可明显诱导生长激素腺瘤细胞凋亡;与阴性对照组相比较,任何时段低浓度TSP-1对生长激素腺瘤细胞的TGF-β1mRNA表达无明显影响(P>0.05)。结论 TSP-1在体外可以抑制生长激素腺瘤细胞生长,并能诱导细胞凋亡,其作用随剂量和时间的增加而增强;在体外,低中浓度的TSP-1不能调节生长激素腺瘤细胞的TGF-β1基因表达。

关键词: 生长激素腺瘤; 原代细胞培养; 细胞凋亡; 体外研究

Thrombospondin-1 induces somatotroph adenoma cell apoptosis in vitro

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Abstract:

Objective To investigate the effect of TSP-1 on the growth of primary somatotroph adenoma cells and expression of TGF-β1 in somatotroph adenoma cells in vitro. Methods Human somatotroph adenoma (12 cases) cells were cultured in vitro, and the growth-inhibiting rate was obtained by MTT. Flow cytometry was applied to evaluate the apoptosis rate in the cultured cells, and RT-PCR was applied to determine TGF-β1 mRNA expression in somatotroph adenoma cells after treated with TSP-1. Results The growth of primary somatotroph adenoma cells was significantly inhibited by TSP-1 with concentration and time dependence. Even low concentration of TSP-1 (1-5nmol/L) inhibited cell growth in vitro after 48h. The data of flow cytometry suggested that TSP-1 induced somatotroph adenoma cell apoptosis in vitro and the effect was positively related with concentrations and time. No significant down-regulation of TGF-β1 mRNA expression was induced by low concentration of TSP-1 at any acting time, compared with the negative control group (P>0.05). Conclusion TSP-1 could induce apoptosis and inhibit primary somatotroph adenoma cell proliferation in vitro, and the effect might be positively related with concentrations and time. In vitro, TSP-1 in low or medium concentration could not regulate expression of TGF-β1.

Keywords: Somatotroph adenomas; Primary cell culture; Apoptosis; In vitro study

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