

论著

携带基质金属蛋白酶组织抑制因子的重组腺病毒对宫颈癌细胞生物学效应的影响

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摘要 摘要: 目的 探讨携带基质金属蛋白酶组织抑制因子 (TIMPs) 基因的重组腺病毒 (Ad-TIMP-3) 对宫颈癌细胞生物学效应的影响。方法 将Ad-TIMP-3感染CaSKi和HeLa细胞, 采用RT-PCR方法检测感染细胞内TIMP-3 mRNA的表达, Western blot方法检测感染细胞TIMP-3和p53的表达。分别采用4' 6-二脒-2-苯基吲哚(DAPI)染色、MTT法、细胞黏附性及侵袭性实验检测Ad-TIMP-3对细胞凋亡、存活率、黏附性和侵袭能力的影响。结果 感染Ad-TIMP-3的CaSKi细胞中TIMP-3 mRNA及蛋白质的表达量均呈时间依赖性增加。TIMP-3表达上调可诱导CaSKi和HeLa细胞表达p53。Ad-TIMP-3体外感染可显著促进细胞凋亡、降低细胞的存活率 (P<0.001), 并存在旁观者效应; 使细胞的侵袭能力及黏附能力下降 (P<0.01)。感染Ad-TIMP-3的CaSKi和HeLa细胞的存活率显著低于感染Ad-p53的细胞 (P<0.05, P<0.01)。结论 体外感染Ad-TIMP-3抑制肿瘤效果显著, 为体内宫颈癌基因治疗研究奠定了基础。

关键词 [金属蛋白酶组织抑制因子](#) [腺病毒](#) [宫颈癌](#) [基因治疗](#)

分类号

Effects of Adenovirus Delivered Tissue Inhibitor of Metalloproteinases Transfection on Biological Behaviors of Cervical Cancer Cell Lines

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Abstract ABSTRACT: Objective To explore the effects of adenovirus delivered tissue inhibitor of metalloproteinases-3 (Ad-TIMP-3) on the biological behaviors of cervical cancer cell lines and to evaluate its potential application in cervical cancer gene therapy. Methods We transferred Ad-TIMP-3 into cervical cancer cells. The TIMP-3 mRNA expression was assessed by RT-PCR, and the TIMP-3 and p53 protein expressions were assessed with Western blot. The apoptotic changes of cells were illustrated with morphology and DAPI staining. The viability of cells was determined with MTT assay. The abilities of in vitro invasion and adhesion were evaluated by the invasion and adhesion assays respectively. Results After infection, the TIMP-3 mRNA and protein were significantly upregulated in a time-dependent manner. Overexpression of TIMP-3 markedly increased p53 protein level in spite of the backgrounds of p53 gene in cells. Ad-TIMP-3 infection induced massive apoptosis of cervical cancer cells with a marked bystander effect. The abilities of in vitro invasion and adhesion were inhibited significantly (P<0.01). The cytotoxicity of Ad-TIMP-3 was significantly stronger than that of Ad-p53 (P<0.05, P<0.01). Conclusions Ad-TIMP-3 infection has cytotoxic effects on cervical cancer cells and can inhibit the expressions of these malignant phenotypes. Ad-TIMP-3 may be a potentially useful agent for cervical cancer gene therapy.

Key words [tissue inhibitor of metalloproteinase](#) [adenovirus](#) [cervical cancer](#) [gene therapy](#)

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