

# 中国肿瘤生物治疗杂志

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### siRNA干扰CHRNA5基因的表达抑制尼古丁对人肺癌细胞的促增殖作用 点此下载全文

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#### 摘要:

目的: 研究siRNA干扰尼古丁乙酰胆碱受体a5(cholinergic receptor nicotinic alpha 5, CHRNA5)基因表达后对尼古丁促人肺癌A549细胞增殖作用的影响。 方法: 设计并合成CHRNA5-siRNA片段,并经脂质体介导转染A549细胞。荧光定量PCR、Western blotting检测转染后A549细胞中 CHRNA5 mRNA和蛋白的表达,MTT法检测CHRNA5-siRNA对尼古丁促A549细胞增殖作用的影响。 结果: 成功构建了CHRNA5-siRNA并成功转染A549细胞。CHRNA5-siRNA转染组A549细胞的 CHRNA5 mRNA 表达量明显低于si-NC转染对照组(0.196±0.044 vs 0.944±0.027, P <0.01),CHRNA5-siRNA转染组A549细胞的CHRNA5 蛋白表达量明显低于si-NC转染组(0.267±0.031 vs 0.745±0.035, P <0.01)。在无尼古丁作用时,CHRNA5-siRNA的转染不能抑制A549细胞的增殖。在尼古丁作用下,A549细胞增殖显著增加( P <0 01),CHRNA5-siRNA转染可明显抑制尼古丁的促增殖作用( P <0.01)。 结论: siRNA下调肺癌A549细胞中 CHRNA5 的表达可以抑制尼古丁促细胞增殖作用,CHRNA5 可能是肺癌治疗的潜在靶点之一。

关键词: a5-尼古丁乙酰胆碱受体(CHRNA5) siRNA 肺癌 尼古丁 增殖

siRNA interference of CHRNA5 gene expression inhibits nicotine-induced proliferation of human lung cancer cells <u>Download</u> Fulltext

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## Abstract:

Objective: To study the effect of siRNA targeting CHRNA5 (cholinergic receptor nicotinic alpha 5) gene expression on nicotine-induced proliferation of lung cancer A549 cells. Methods: CHRNA5-siRNA fragment was designed and synthesized, and then transfected into A549 cells by Lipofectamine assay. Expressions of CHRNA5 mRNA and protein in transfected-A549 cells were examined by FQ-PCR and Western blotting analysis, respectively. The effect of CHRNA5-siRNA on nicotine-induced proliferation of A549 cells was detected by MTT method. Results: CHRNA5-siRNA was successfully constructed and transfected into A549 cells. CHRNA5 mRNA expression in CHRNA5-siRNA-transfected A549 cells was significantly lower than that in control si-NC control siRNA transfected A549 cells (0.196 $\pm$ 0.044 vs 0.944 $\pm$ 0 027, P <0 01), and CHRNA5 protein expression in CHRNA5-siRNA-transfected A549 cells was also lower than that in si-NC-transfected A549 cells (0.267 $\pm$ 0.031 vs 0.745 $\pm$ 0.035, P <0.01). When A549 cells were not treated with nicotine, CHRNA5-siRNA transfection inhibited the proliferation of A549 cells. But Nicotine increased the proliferation of A549 cells (P <0.01), and this positive effect was inhibited by CHRNA5-siRNA transfection (P <0.01). Conclusion: siRNA targeting CHRNA5 expression can inhibit nicotine-induced proliferation of A549 cells, which suggests that CHRNA5 may serve as a potential target for gene therapy of lung cancer.

Keywords: cholinergic receptor nicotinic alpha 5(CHRNA5) small interfering RNA (siRNA) lung cancer nicotine proliferation

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