

Ki67基因RNA干扰增殖型腺病毒对肺癌细胞增殖的抑制作用

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Antitumor Effect of Replication-competent Adenovirus Expressing Short Interference RNA Targeting Ki67 Gene on Lung Cancer

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全文: PDF (303 KB) HTML (0 KB) 输出: BibTeX | EndNote (RIS) 背景资料

摘要 目的 探讨Ki67基因小干扰RNA (Ki67. siRNA) 增殖型腺病毒对肺癌细胞的示伤作用及IXID / 的表达情况。方法 提取重组腺病毒的DNA, PCR鉴定正确后, 大量扩增, 氯化铯梯度离心纯化, 测病毒滴度。ZD-Ki67感染人肺癌细胞系 (A549), 通过荧光显微镜下观察和结晶紫染色法检测细胞病作用、IVITT法检测细胞存活、Western印迹法检测E1A、逆转录-聚合酶链反应 (RT-PCR) 检测Ki67表达。结果 PCR鉴定表明ZD55-Ki67包含目的基因且无野生型腺病毒的污染; ZD55-Ki67滴度为 4.5×10^{10} PFU / ml免疫印迹证实ZD55-Ki67在肿瘤细胞中表达E1A; ZD55-Ki67抑制Ki67表达及肺癌细胞生长的作用显著优于Ad-Ki67。结论 ZD55-Ki67能够有效抑制Ki67基因的表达, 降低肺癌细胞的增殖能力, 为肺癌研究和抗肿瘤基因治疗提供新的策略。

关键词: 腺病毒 Ki67 基因 RNA 干扰

Abstract: Objective To investigate the anti-tumor effects of replication-competent adenovirus expressing short interference RNA targeting Ki67 gene (Ki67-siRNA) and the expression level of Ki67 gene on lung cancer A549 cells in vitro. Methods The recombinant adenoviruses (ZD55-Ki67), extracted DNA, were verified by PCR. Viruses were propagated on HEK293 cells and purified by CsCl gradient according to standard techniques, and functional PFU titers were determined by plaque assay on 293 cells. The antitumor potential of ZD55-Ki67 to A549 cells was evaluated by fluorescence microscopy, MTT assay and crystal violet dye method. The expression of E1A was also detected by West-blot. The effect of ZD55-Ki67 on the Ki-67 expression of A549 cells was detected by RT-PCR. Results The analysis of PCR indicated the recombinant adenovirus ZD55-Ki67 containing Ki67-siRNA gene and without wild adenovirus. Functional PFU titers of ZD55-Ki67 were 4×10^{10} PFU/ ml. West-blot analyses indicated ZD55-Ki67 can express E1A in adenovirus-infected A549 cells. The expression of Ki67-siRNA gene delivered by ZD55-Ki67 is more effective to inhibit the proliferation and the Ki67 expression in mRNA levels of A549 cells than Ad-Ki67 in vitro. Conclusion ZD55-Ki67 can inhibit the expression of Ki67 gene and proliferation of lung cancer A549 cells. ZD55-Ki67 could be a powerful tool in further investigations of Ki67 gene and a novel therapeutic strategy for lung cancer.

Key words: Adenovirus Ki67 gene RNA interference

收稿日期: 2006-08-01;

通讯作者: 郑骏年

引用本文:

毛立军,郑骏年,郑宏祥等. Ki67基因RNA干扰增殖型腺病毒对肺癌细胞增殖的抑制作用[J]. 肿瘤防治研究, 2007, 34(4): 262-265.

MAO Li-jun,ZHENG Jun-nian,ZHENG Hong-xiang et al. Antitumor Effect of Replication-competent Adenovirus Expressing Short Interference RNA Targeting Ki67 Gene on Lung Cancer[J]. CHINA RESEARCH ON PREVENTION AND TREATMENT, 2007, 34(4): 262-265.

没有本文参考文献

[1] 崔海宁;余壮明;于飞;顾冠宏. rAAV-Slug-siRNA载体的构建及其抗胰腺癌的实验 [J]. 肿瘤防治研究, 2011, 38(3): 265-269.

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- [2] 宋玉姣;韩继波;陈始明;肖伯奎;陈晨;陶泽璋. 腺病毒介导的shRNA沉默hTERT基因表达对鼻咽癌细胞增殖和凋亡的影响[J]. 肿瘤防治研究, 2011, 38(12): 1351-1355.
- [3] 马玲娣;刘乾;王勇;王仕忠;鲍永仪;关乃富;倪诚;樊小龙. 非小细胞肺癌中CAR和CD46的表达及临床意义[J]. 肿瘤防治研究, 2011, 38(11): 1268-1271.
- [4] 李进;王芹;宋力;刘强;王月英;唐卫生;张宁;王蕾. 采用GatewayTM系统构建人Rb94基因重组腺病毒载体[J]. 肿瘤防治研究, 2010, 37(9): 975-978.
- [5] 陈绍坤;刘岚;税青林;曾永秋;赵小平;黄燕. siRNA-TRF2对人乳腺癌MCF-7细胞增殖的影响[J]. 肿瘤防治研究, 2010, 37(9): 1010-1012.
- [6] 魏玲;宋现让;孙菊杰;郑爱青;王兴武;谢丽;李敏;左文述. 乏氧射线双调控的TK腺病毒载体联合放疗抑制乳腺癌裸鼠移植瘤的生长[J]. 肿瘤防治研究, 2010, 37(3): 259-262.
- [7] 赵珍珍;罗庆;宿玉玺;郑改焕;刘伟;金先庆. Ad-EGFP-MDR1转染对小鼠骨髓细胞的影响[J]. 肿瘤防治研究, 2010, 37(08): 855-858.
- [8] 谢富华;王润秀;李昌武;覃燕梅;梁念慈. *survivin* shRNA重组腺病毒的构建及其对人肺癌细胞A549的作用[J]. 肿瘤防治研究, 2009, 36(4): 277-281.
- [9] 吴建辉;张勇;黎玮;马洪顺. 腺病毒介导的HSV-TK/GCV自杀基因治疗前列腺癌的体外实验[J]. 肿瘤防治研究, 2009, 36(11): 920-924.
- [10] 齐进春;张勇;黎玮;蔡文清;王亚轩;刘凯隆. hTERT启动子联合HSV-tk/GCV对人前列腺癌裸鼠移植瘤的治疗作用[J]. 肿瘤防治研究, 2009, 36(10): 815-817.
- [11] 刘艳华;郑骏年;毛立军;孙方浩;温儒民;张宝福;李望;刘俊杰;裴冬生. 溶瘤腺病毒介导RNA干扰人端粒酶逆转录酶抑制HeLa细胞生长[J]. 肿瘤防治研究, 2009, 36(10): 811-814.
- [12] 陈绍坤;刘岚;税青林;曾永秋;赵娇. 人TRF2基因有效siRNA序列的筛选[J]. 肿瘤防治研究, 2009, 36(1): 43-46.
- [13] 苏国强;黄宗海;张思宇. 重组腺病毒介导KDRP-CD/TK基因对大肠癌细胞增殖与凋亡的影响[J]. 肿瘤防治研究, 2008, 35(3): 173-176.
- [14] 邢春根;陈正荣;蒋银芬;吕孝东;吴永友;赵奎. siRNA抑制胃腺癌VEGF2C表达和淋巴管生成[J]. 肿瘤防治研究, 2008, 35(11): 787-790.
- [15] 张盛周;张宏霞;潘飞燕;李朝军. 腺病毒介导的siRNA下调c-Met表达抑制肝癌细胞生长[J]. 肿瘤防治研究, 2008, 35(05): 309-312.

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