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基础研究

RNAi沉默STAT3基因对人卵巢癌SKOV3细胞裸鼠移植瘤生长的抑制作用

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摘要：

目的：研究pSilencer1.0-U6-siRNA-STAT3重组质粒对人卵巢癌SKOV3细胞裸鼠皮下移植瘤生长的抑制作用，阐明RNA干涉技术在卵巢癌生物治疗领域中的作用。方法：应用人卵巢癌细胞系SKOV3对15例裸鼠建立人卵巢癌皮下移植瘤模型，随机分为3组：对照组（生理盐水）、空质粒对照组及重组质粒组（pSilencer1.0-U6-siRNA-STAT3）。应用电子穿孔仪将质粒转入裸鼠移植瘤内，观察重组质粒注射后第7、14、21和28天各组裸鼠皮下移植瘤体积变化。利用Western blotting检测重组质粒对STAT3蛋白表达的影响，采用HE及TUNEL染色方法观察肿瘤组织形态变化及细胞凋亡情况。结果：重组质粒瘤内注射对SKOV3裸鼠皮下移植瘤的生长有明显的抑制作用，与2个对照组比较，重组质粒组裸鼠移植瘤生长速度明显减慢（P<0.01）。重组质粒组瘤体内STAT3及CyclinD1、VEGF、survivin、c-myc蛋白表达明显低于2个对照组（P<0.01）。HE染色显示，重组质粒组肿瘤细胞出现大片细胞坏死，2个对照组肿瘤细胞以正常形态居多。TUNEL染色显示，重组质粒组癌组织有大量细胞凋亡，2个对照组几乎均为TUNEL阴性反应细胞。结论：pSilencer1.0-U6-siRNA-STAT3重组质粒能明显抑制人卵巢癌细胞SKOV3裸鼠皮下移植瘤的生长。

关键词： RNA干涉；SKOV3；STAT3；卵巢肿瘤

Inhibitory effect of STAT3 silenced with RNAi on growth of human ovarian cancer SKOV3 cell transplanted tumor in nude mice

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Abstract:

Objective To study the inhibitory effect of recombinant plasmid pSilencer1.0-U6-siRNA-STAT3 on ovarian cancer in nude mice and clarify the the role of RNA interference(RNAi) technique in the field of biological therapy of ovarian cancer.Methods The subcutaneous transplantated tumor models in 15 nude mice were established with cell line SKOV3 of human ovarian cancer. The model mice were randomly divided into 3 groups: control group(physiologic saline), control group of vacancy plasmid,and recombinant plasmid group (pSilencer1.0-U6-siRNA-STAT3).The recombinant plasmid was transferred into transplanted tumor in nude mice by electron piercing instrument.The growth status of subcutaneous transplanted tumor in nude mice after injection was observed.The protein expression of STAT3 was detected by Western blotting.The morphological changes and apoptosis of tumor cells were observed by HE and TUNEL staining.Results The growth of transplanted tumor had an obvious suppression after transferred.Compared with two control groups,the growth velocity of transplanted tumor in recombinant plasmid group was decreased(P<0.01),the protein levels of Stat3,CyclinD1,VEGF,Survivin,c-myc in recombinant plasmid group were reduced(P<0.01).HE staining showed the tumor cells in recombinant plasmid group had nuclei pyknosis,fragmentation and other signs of apoptosis.The TUNEL test results confirmed that the tumor tissues in recombinant plasmid group had a large amount of apoptotic cells.Conclusion The recombinant plasmid pSilencer1.0-U6-siRNA-STAT3 can obviously inhibit the growth of ovarian cancer in nude mice.

Keywords: RNA interfere；SKOV3；STAT3；ovarian neoplasms

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