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Effects of STAT3 Gene Silencing by ShRNA on Colon Carcinoma Cells and Chemotherapy Sensitivity to Cisplatin

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英文关键词:STAT3 RNA interference colon carcinoma cisplatin

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中文摘要:

目的 构建携带信号转导与转录激活子3(STAT3)基因的短发夹RNA(shRNA)真核表达载体，观察pGPU6/GFP/Neo- STAT3重组质粒对HCT116细胞顺铂化疗敏感性的影响。方法 设计并构建稳定转录shRNA STAT3的质粒，采用脂质体法转染结肠癌HCT116细胞，Western blot法检测转染后STAT3蛋白表达变化，MTT法检测细胞增殖变化。重组质粒联合顺铂作用于HCT116细胞后，MTT法检测细胞存活率。结果 成功构建了pGPU6/GFP/Neo-STAT3重组质粒，测序证实重组质粒构建正确。重组质粒转染HCT116细胞后，细胞增殖明显受抑制，STAT3蛋白表达降低。重组质粒联合顺铂治疗后，细胞增殖活性显著降低。结论 shRNA STAT3重组质粒能明显降低HCT116细胞中STAT3蛋白的表达，抑制细胞增殖，提高结肠癌细胞对顺铂的敏感性。

英文摘要:

OBJECTIVE To construct eukaryotic expression vectors of short hairpin RNA(shRNA) of STAT3 gene and investigate the effect of shRNA STAT3 on chemotherapy sensitivity of HCT116 cells to cisplatin. METHODS Plasmids carrying shRNA targeting STAT3 were designed constructed and transfected into HCT116 cells by liposome transfection methods. The expressing levels of STAT3 protein were detected by Western blot. Cell survival rate was observed with MTT. The role of plasmids in combination with cisplatin on the HCT116 cells was observe. The cell growth was assessed by MTT assay. RESULTS DNA sequence analysis demonstrated that the eukaryotic expression vector of

pGPU6/GFP/Neo-STAT3 were constructed successfully. The recombinant plasmid was transfected into HCT116 cells, cell proliferation was obviously inhibited, reducing the expression of STAT3 protein. After plasmid and cisplatin combination treatment, cell survival rate was obviously decreased. CONCLUSION STAT3 shRNA plasmid could significantly down-regulate the expression of STAT3 protein in HCT116 cells, inhibit cell proliferation and improve the sensitivity to cisplatin.