RNA干扰FGFR3基因表达诱导骨肉瘤细胞凋亡及下调Wnt信号通路的 研究

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Title: Study on the expression of FGFR3 gene by RNA interference induces apoptosis and downregulates Wnt signaling pathway in osteosarcoma cells

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摘要: 目的：探讨RNA干扰人成纤维细胞生长因子受体3（FGFR3）基因表达对骨肉瘤细胞凋亡及Wnt信号通路的影响。方法：以LipofectamineTM 2000为载体，参照其转染说明将设计合成的2个针对FGFR3的特异性siRNA及阴性对照siRNA转染人骨肉瘤MG63细胞，同时设置空白对照组，转染48 h，Western blotting检测FGFR3、β-catenin、Survivin和Bax蛋白的表达；流式细胞术检测细胞凋亡率；二氯二氢荧光素二乙酸酯（H2DCFHDA）探针检测活性氧（ROS）含量。结果：2个FGFR3 siRNA转染MG63细胞后FGFR3蛋白表达均明显受到抑制，与空白对照组及NC组比较差异具有统计学意义（P<0.05）。MG63细胞转染FGFR3 siRNA后细胞凋亡率明显升高，ROS含量明显升高，β-catenin和Survivin蛋白的表达明显降低，Bax蛋白的表达明显升高，与NC组比较差异均具有统计学意义（P<0.05）。结论：RNA干扰FGFR3基因表达可诱导骨肉瘤细胞凋亡，机制可能与细胞内ROS含量升高及Wnt信号通路下调有关。

Abstract: Objective：To investigate effects of FGFR3 gene expression by RNA interference on cell apoptosis and Wnt signaling pathway in osteosarcoma cells.Methods：LipofectamineTM 2000 as a carrier，2 FGFR3 specific siRNA and negative control siRNA were transfected into human osteosarcoma MG63 cells reference to the description of transfection，and the blank control group was set up at the same time.Cells were transfected for 48 h，the protein expression of FGFR3，β-catenin，Survivin and Bax were detected by Western blotting.Cells apoptosis rate was detected by flow cytometry.The H2DCFHDA probe was used to detect the content of ROS.Results：The expression of FGFR3 protein in MG63 cells transfected with 2 FGFR3 siRNA were obviously inhibited，and the difference were statistically significant compared with the control group and the NC group(P<0.05).After FGFR3 siRNA was transfected into MG63 cells，the cell apoptosis rate increased significantly，the content of ROS increased significantly，the protein expression of β-catenin and Survivin decreased significantly，and the expression of Bax protein was significantly increased，and the difference was statistically significant compared with the NC group(P<0.05).Conclusion：FGFR3 gene expression by RNA interference can induce osteosarcoma cell apoptosis，which may be related to the increase of intracellular ROS and the downregulation of Wnt signaling pathway.

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备注/Memo: -

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