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siRNA沉默livin的表达对人结肠癌HT-29细胞增殖、凋亡及侵袭的影响 点此下载全文

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摘要：

目的： 探讨小干扰RNA（small interference RNA，siRNA）沉默人结肠癌HT-29细胞livin表达对HT-29细胞增殖、凋亡和侵袭的影响。 方法： 合成靶向livin的双链siRNA（livin-siRNA），转染HT-29细胞，RT-PCR及Western blotting检测HT-29细胞中livin mRNA及蛋白的表达，MTT实验检测HT-29细胞的增殖，流式细胞术检测HT-29细胞周期分布及凋亡，细胞侵袭实验检测HT-29细胞侵袭性的变化，caspase-3活性检测试剂盒检测caspase-3活性的变化。 结果： Livin-siRNA转染后48 h，与空白组、阴性对照组及脂质体组相比，livin-siRNA转染组HT-29细胞中livin mRNA水平明显下降（0.073±0.007 vs 0.395±0.082、0.423±0.025、0.418±0.032，P <0.05），其蛋白表达也明显下调（0.106±0.003 vs 0.456±0.065、0.473±0 078、 0 491±0.045，P <0.05）。转染96 h后，livin-siRNA组HT-29细胞增殖能力明显低于对照组及脂质体组（0.564±0 102 vs 0 833±0.127、0.860±0.153，P <0.05），且细胞凋亡率升高\[（16.5±2.8）% vs （2.4 ±0.5） %、（3.7±1.0） %， P <0.05\]。侵袭实验显示，livin-siRNA转染后，穿过Matrigel膜的HT-29细胞数量明显少于对照组及脂质体组\[（31.3±4.5） vs (101.3±8.6)、(97.4±7.8)个， P <0.05）\]。livin-siRNA组HT-29细胞的caspase-3活性低于对照组（0.160 ±0.023 vs 0.347±0 058， P <0.05）。 结论： siRNA沉默livin的表达可抑制HT-29细胞的增殖，诱导细胞凋亡，抑制细胞的侵袭。

关键词：结肠癌 livin 小干扰RNA 基因治疗

Effects of siRNA silencing livin expression on proliferation, apoptosis and invasion of human colon cancer cell line HT-29 Download Fulltext

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Abstract:

Objective：To explore the effects of small interference RNA (siRNA) targeting livin on the proliferation, apoptosis and invasion of human colon cancer cell line HT-29. Methods: Chemically synthetic double-strand siRNA targeting livin (livin-siRNA) was transfected into HT-29 cells, and then RT-PCR and Western blotting were used to detect the expression of livin mRNA and protein in HT-29 cells. MTT assay was performed to analyze the proliferation of HT-29 cells. The cell apoptosis and cell cycle distribution were analyzed by flow cytometry. The invasion assay and caspase-3 detective kit were used to detect the change of invasion and caspase-3 activity in HT-29 cells. Results: Forty-eight hours after transfection, there was a significant decrease in the expressions of both livin mRNA (0.073±0 007 vs 0.395±0 082, 0.423±0.025, 0.418±0.032, P <0.05) and livin protein (0.106±0.003 vs 0.456±0 065, 0.473±0 078、0.491±0.045, P <0.05) in the livin-siRNA group, compared with the blank and negative control and liposome groups. Ninety-six hours after transfection, the growth of HT-29 cells in the livin-siRNA group was significantly lower than that in the control and liposome groups (0.564±0.102 vs 0.833±0.127, 0.860±0.153, P <0 05), and the rate of apoptosis was obviously increased (\[16.5±2.8\] % vs \[2.4 ±0.5\]%, \[3.7±1.0\] %, P <0 05). The invasion assay demonstrated that the number of the migration cells was lower in the livin-siRNA group than in the control and liposome groups (31.3±4.5 vs 101.3±8.6, 97.4±7.8, P <0.05). The activity of caspase-3 in the livin-siRNA group was decreased compared with that in the control group (0.160 ±0.023 vs 0.347± 0.058, P <0.05). Conclusion: The siRNA silencing livin expression in HT-29 cells can suppress the proliferation, induce the apoptosis and inhibit the invasion of HT-29 cells.

Keywords:colon cancer livin small interference RNA gene therapy

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