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miRNA-210对人乳腺癌细胞增殖、迁移和侵袭的影响 点此下载全文

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摘要：

目的： 探讨miRNA-210（miR-210）在人乳腺癌组织中的表达及其对人乳腺癌细胞MDA-MB-231增殖、迁移和侵袭的影响。 方法 ： 收集2011年10月至2012年6月期间昆明医科大学第一附属医院20例乳腺癌患者组织标本，real-time PCR检测乳腺癌组织和癌旁组织以及乳腺癌细胞MDA-MB-231和正常乳腺细胞MCF-10a中miR-210的表达。采用Lipofectamine TM 2000将miR-210 inhibitor转染至MDA-MB-231细胞中，通过荧光显微镜检测miR-210的转染效率，MTT和软琼脂克隆形成实验检测MDA-MB-231细胞的增殖，流式细胞术检测细胞周期和凋亡，Transwell法检测细胞的迁移、侵袭能力。 结果： miR-210在乳腺癌组织和MDA-MB-231细胞中的表达水平均显著高于癌旁组织和正常乳腺细胞（ P <0.01）。miR-210 inhibitor成功转染MDA-MB-231细胞，转染效率为（88.29±2.98）%，转染miR-210 inhibitor后MDA-MB-231细胞的增殖和克隆形成能力明显减弱（ P <0.05），被阻滞于G 0/G 1期的细胞数明显增多\[（64.23±3.12）% vs （55.53±0.96）%， P <0.01\]，凋亡细胞比例也显著增加\[（31.90±3.05）% vs （15.98±0.63）%， P <0.01\]，细胞的迁移\[（291.00±43.12） vs （1137.38±83.49）个， P <0 01 \]、侵袭\[（131.63±32.01） vs （647.88±31.20）个， P <0.01\]均受到明显抑制。 结论： miR-210在乳腺癌组织和细胞中过表达，转染miR-210 inhibitor后乳腺癌细胞MDA-MB-231的增殖、迁移和侵袭能力明显减弱。

关键词：乳腺癌 MDA-MB-231 miRNA miRNA-210 增殖 迁移 侵袭

Effect of miRNA-210 on proliferation, migration and invasion of human breast cancer cells Download Fulltext

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Abstract:

Objective:To investigate the expression of miRNA-210(miR-210) in breast cancer tissues and its effect on proliferation, migration and invasion of breast cancer MDA-MB-231 cells. Methods: Tissues of breast cancer patients were collected from Department of Medical Oncology, First Affiliated Hospital of Kunming Medical University during October 2011 to June 2012. The expressions of miR-210 were compared between breast cancer tissues and the para-carcinoma tissues of 20 patients, as well as between breast cancer MDA-MB-231 cells and normal breast MCF-10a cells by real-time PCR. miR-210 inhibitor was transfected into breast cancer MDA-MB-231 cells by Lipofectamine TM 2000 and the transfection efficiency was examined under a fluorescence microscope. Cell proliferation was evaluated by MTT assay and soft-agar colony formation assay. The cell cycle and apoptosis were detected by flow cytometry assay. The cell migration and invasion abilities were detected by migration and invasion assay. Results: The expressions of miR-210 in breast cancer tissues and cells were both significantly higher than those in para-carcinoma tissues and normal breast cells (P <0.01). miR-210 inhibitor was successfully transfected into MDA-MB-231 cells with a high transfection efficiency of (88.29±2.98)%. The proliferation ability of MDA-MB-231 cells was decreased significantly after transfection of miR-210 inhibitor (P <0.05). The percentages of cells in G 0/G 1 phase (\[64.23±3.12\]% vs \[55 53± 0.96\]%, P <0.01\] and of the apoptotic cells (\[31.90±3 05\]% vs \[15.98± 0.63\]%, P <0.01） were significantly increased. The migration (\[291.00±43.12\] vs \[137.38± 83 49\], P <0.01 \] and invasion (\[131.63±32.01\] vs \[647.88±31.20\], P <0.01\] of MDA-MB-231 cells were significantly inhibited . Conclusion:miR-210 is over-expressed in breast cancer tissues and cells. The proliferation, migration and invasion of human breast cancer MDA-MB-231 cells are inhibited after the transfection of miR-210 inhibitor.

Keywords:breast cancer MDA-MB-231 miRNA miRNA-210 proliferation migration invasion

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