[1]蒋国燕,李瑾,施露,等.RNAi沉默MACC1基因表达抑制乳腺癌MCF-7细胞增殖和迁移[J].第三军医大学学报,2013,35(18):1928-1931.
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Title: RNAi-mediated silencing of MACC1 suppresses proliferation and migration in breast cancer cells MCF-7

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关键词: 结肠癌转移相关基因1; 小干扰RNA; MCF-7; 细胞增殖; 细胞迁移

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摘要: 目的　探讨RNAi沉默MACC1基因表达对乳腺癌MCF-7细胞增殖及迁移的影响及相关的分子机制。　方法　化学合成针对MACC1基因的荧光标记的siRNA-FAM，利用siRNA 转染试剂将MACC1特异性siRNA-FAM转染至乳腺癌MCF-7细胞；采用RT-PCR检测siRNA 对MACC1 mRNA表达的影响，Western blot检测siRNA对MACC1蛋白合成的影响；MTT 实验检测沉默MACC1基因后对MCF-7细胞增殖活性的影响；Transwell迁移实验检测沉默MACC1基因后对MCF-7细胞迁移能力的影响；Western blot检测干扰MACC1对S100A4及vimentin蛋白合成的影响。　结果　MACC1基因在乳腺癌MCF-7细胞高表达；针对MACC1基因的siRNA 转染MCF-7细胞48 h后，siRNA组与空白对照组比较，能够显著抑制MACC1基因表达和蛋白合成，抑制效率分别为81%和75%；MACC1特异性siRNA转染MCF-7细胞24、48、72 h后，MMT结果显示与空白对照组比较，siRNA组能够抑制细胞生长，并随着时间延长抑制明显（$P<0.05$）；转染MCF-7细胞48 h 后，Transwell迁移实验结果显示siRNA组与空白对照组比较，穿过小室细胞数明显降低，其能有效抑制MCF-7细胞迁移（$P<0.05$）；siRNA组与空白对照组相比，S100A4和vimentin表达降低（$P<0.05$）。以上实验阴性对照组和空白对照组之间差异均无统计学意义（$P>0.05$）。　结论　利用特异性siRNA干扰MACC1基因表达，可显著抑制乳

腺癌MCF-7细胞增殖和迁移能力，且这一过程可能与S100A4和Vimentin的表达下调有关。

Abstract: Objective To determine the effect of metastasis associated in colon cancer 1 (MACC1) knockdown by RNA interference (RNAi) on the proliferation and migration in breast cancer cells. Methods The fluorescently-labeled siRNA-FAM targeting MACC1 gene was chemically synthesized, and then transfected into human breast cancer cell line MCF-7 by siRNA transfection reagent. Inhibitory efficiency of MACC1 expression at mRNA and protein levels was examined by RT-PCR and Western blotting respectively. Moreover, MTT assay was applied to assess the influence of specific MACC1 siRNA on the cell growth. Transwell chamber test was used to observe the cell migration ability. Furthermore, downstream migration-related targets of MACC1, S100A4 and vimentin were measured in MCF-7 cells by Western blot analysis. Results MACC1 was strongly expressed in MCF-7 cells. Transfection of specific MACC1 siRNA-FAM resulted in a highly-efficient declined expression of MACC1, accounting for 81% at mRNA and 75% at protein levels respectively after 48 hours' transfection. Specific siRNA-FAM of MACC1 also suppressed cell proliferation in a time-dependent manner, with significant differences for the cells after transfection for 24, 48 and 72 h compared with the cells without transfection (P<0.05). Transwell chamber test showed that there were less cells migrated through the membrane in the transfected cells than in the control (P<0.05), indicating specific MACC1 siRNA-FAM decreasing migration ability in MCF-7 cells. But, no difference was found in migration ability in the blank control and negative control cells (P>0.05). Knockdown of MACC1 expression inhibited the expression of S100A4 and vimentin protein in MCF-7 cells (P<0.05). Conclusion Specific siRNA targeting MACC1 efficiently inhibits the proliferation and migration in MCF-7 cells, which might be through down-regulating S100A4 and vimentin.

参考文献/REFERENCES:

蒋国燕，李瑾，施露，等. RNAi沉默MACC1基因表达抑制乳腺癌MCF-7细胞增殖和迁移[J].第三军医大学学报,2013,35(18):1928-1931.

相似文献/REFERENCES:

[1]向征,张才全,汤为学.TSG101-siRNA对肝癌耐药细胞株QGY/CDDP的逆转作用[J].第三军医大学学报,2008,30(02):170.
XIANG Zheng,ZHANG Cai-quan,TANG Wei-xue.Effect of tumor susceptibitity gene 101-siRNA eukaryotic expression vector and cisplatin on proliferation of QGY/CDDP[J].J Third Mil Med Univ,2008,30(18):170.

[2]吴跃,苟欣,吕天兵,等.3种不同的survivin siRNA对EJ28细胞增殖和凋亡的影响[J].第三军医大学学报,2007,29(22):2152.
WU Yue,GOU Xin,LU Tian-bing,et al.Proliferation and apoptosis of EJ28 cells induced by 3 different survivin-targeted siRNA[J].J Third Mil Med Univ,2007,29(18):2152.

[3]李阳,倪兵,石辛甫,等.质粒表达型siRNA对SARS-CoV复制与感染干扰的初步研究[J].第三军医大学学报,2005,27(02):91.

[4]沈娜,张潜英,余晓燕,等.人乳头瘤病毒16E6基因沉默对鼻咽癌细胞侵袭转移能力及细胞周期的影响[J].第三军医大学学报,2009,31(18):1757.
SHEN Na,ZHANG Qian-ying,YU Xiao-yan,et al.Human papillomavirus 16 E6 gene silencing suppresses invasion and cell cycle of nasopharyngeal carcinoma cells in vitro[J].J Third Mil Med Univ,2009,31(18):1757.

[5]张维,李宝金,伊远学,等.小干扰RNA特异性抑制淋巴细胞T-bet表达的研究[J].第三军医大学学报,2009,31(13):1291.
ZHANG Wei,LI Bao-jin,YI Yuan-xue,et al.Study on the expression of T-bet on human lymphocytes inhibited by specific siRNA[J].J Third Mil Med Univ,2009,31(18):1291.

[6]向征,张才全,汤为学.TSG101-siRNA表达载体对结肠癌HT29/L-OHP细胞株耐药的逆转作用[J].第三军医大学学报,2009,31(08):716.
XIANG Zheng,ZHANG Cai-quan,TANG Wei-xue.TSG101-siRNA expression vector reverses anti-drug resistanse of human colon cancer cell line HT29 against oxaliplatin[J].J Third Mil Med Univ,2009,31(18):716.