

161-167. Cathepsin B反义RNA抑制乳腺癌细胞的侵袭和迁移[J]. 王海燕, 张和军, 葛爱敏, 黄扬, 陈水平, 万榕. 中国肿瘤生物治疗杂志, 2010, 17(2)

Cathepsin B反义RNA抑制乳腺癌细胞的侵袭和迁移 [点此下载全文](#)

[王海燕](#) [张和军](#) [葛爱敏](#) [黄扬](#) [陈水平](#) [万榕](#)

福建医科大学 基础医学院 病理学系暨肿瘤研究所, 福建 福州 350004; 福建省肿瘤医院 病理科, 福建 福州 350014; 菏泽市立医院 病理科, 山东 菏泽274600; 福建医科大学 基础医学院 病理学系暨肿瘤研究所, 福建 福州 350004; 福建省肿瘤医院 病理科, 福建 福州 350014; 福建医科大学 基础医学院 病理学系暨肿瘤研究所, 福建 福州 350004

基金项目: 福建省自然科学基金资助项目 (No. X0650058); 福建省属高校项目 (No. 2006F5047)

DOI: 10.3872/j.issn.1007-385X.2010.2.009

摘要:

**摘要** 目的: 探讨人cathepsin B(CatB)反义RNA在乳腺癌细胞侵袭与迁移中的作用。方法: 构建携CatB反义RNA的重组质粒pBudCE4.1-antiCatB, 采用脂质体法将重组质粒瞬时转染人乳腺癌细胞MDA-MB-231。Western blotting法检测MDA-MB-231细胞中CatB蛋白的表达, MTT法检测MDA-MB-231细胞的增殖, 细胞-基质黏附实验检测反义CatB对MDA-MB-231细胞黏附能力的影响, 体外侵袭、迁移实验分析反义CatB表达对MDA-MB-231细胞体外侵袭和迁移能力的影响。结果: 成功构建pBudCE4.1-antiCatB表达载体。转染MDA-MB-231细胞后, 与未转染细胞和转染空载体组细胞相比, 转染组MDA-MB-231细胞的CatB蛋白表达水平明显降低 $[(0.96 \pm 0.02) \text{ vs } (1.98 \pm 0.23), (1.84 \pm 0.08), P < 0.05]$ ; 转染组细胞的增殖受到明显抑制 $[(0.255 \pm 0.017) \text{ vs } (0.458 \pm 0.033), (0.421 \pm 0.022), P < 0.01]$ ; 转染组细胞的黏附(基质胶或纤维黏连蛋白)能力明显下降 $[(0.054 \pm 0.017) \text{ vs } (0.111 \pm 0.018), (0.107 \pm 0.017), P < 0.01]$ ; 或 $(0.052 \pm 0.008) \text{ vs } (0.120 \pm 0.014), (0.113 \pm 0.009), P < 0.01]$ ; 转染组细胞的侵袭和迁移能力也明显降低 $[(52.80 \pm 7.76) \text{ vs } (124.00 \pm 44.54), (116.80 \pm 32.87), P < 0.01]$ ; 或 $(60.25 \pm 8.73) \text{ vs } (132.50 \pm 12.15), (119.20 \pm 25.13), P < 0.01]$ 。结论: CatB反义RNA可抑制乳腺癌细胞体外生长、黏附、迁移和侵袭能力。

关键词: [乳腺肿瘤](#) [cathepsin B 基因](#) [反义RNA](#) [转染](#) [黏附](#) [侵袭](#)

Antisense cathepsin B RNA inhibits invasion and metastasis of human breast carcinoma cells [Download Fulltext](#)

[WANG Hai-yan](#) [ZHANG He-jun](#) [GE Ai-min](#) [HUANG Yang](#) [CHEN Shui-ping](#) [WAN Rong](#)

Department of Pathology, Tumor Research Institute, College of Basic Medical Sciences, Fujian Medical University, Fuzhou 350004, Fujian, China; Department of Pathology, Fujian Tumor Hospital, Fuzhou 350014, Fujian, China; Department of Pathology, Heze Municipal Hospital, Heze 274600, Shandong, China; Department of Pathology, Tumor Research Institute, College of Basic Medical Sciences, Fujian Medical University, Fuzhou 350004, Fujian, China; Department of Pathology, Fujian Tumor Hospital, Fuzhou 350014, Fujian, China; Department of Pathology, Tumor Research Institute, College of Basic Medical Sciences, Fujian Medical University, Fuzhou 350004, Fujian, China

Fund Project: Project supported by the Natural Science Foundation of Fujian Province (No. X0650058), and the Higher Institute Foundation of Fujian Province (No. 2006F5047)

Abstract:

**Abstract** Objective: To investigate the effect of antisense cathepsin B(CatB) RNA on the invasion and migration of human breast carcinoma cells. Methods: pBudCE4.1-antiCatB recombinant plasmid carrying antisense cathepsin B(CatB) gene was constructed and transfected into breast carcinoma cell line MDA-MB-231 by lipofection system. The expression of CatB protein in MDA-MB-231 cells was detected by Western blotting analysis; the proliferation of MDA-MB-231 cells was determined by MTT assay. Cell-matrix adhesion assay was used to examine the effect of anti-CatB on adhesion ability of MDA-MB-231 cells. The effects of anti-CatB on the invasion and migration abilities of MDA-MB-231 cells were measured by invasion and migration transwell system. Results: The recombinant plasmid pBudCE4.1-antiCatB was successfully constructed. Expression of CatB protein in MDA-MB-231 cells was decreased after pBudCE4.1-antiCatB transfection compared with those in untransfected and mock-vehicle transfected cells $[(0.96 \pm 0.02) \text{ vs } [1.98 \pm 0.23], [1.84 \pm 0.08], P < 0.05]$ ; the proliferation of MDA-MB-231 cells was also inhibited in pBudCE4.1-antiCatB transfected group $[(0.255 \pm 0.017) \text{ vs } [0.458 \pm 0.033], [0.421 \pm 0.022], P < 0.01]$ ; and the adhesion abilities(binding to matrix or fibronectin) were decreased $[(0.054 \pm 0.017) \text{ vs } [0.111 \pm 0.018], [0.107 \pm 0.017], P < 0.01]$ ; or $[0.052 \pm 0.008] \text{ vs } [0.120 \pm 0.014], [0.113 \pm 0.009], P < 0.01]$ . Transwell assay showed that the invasion and migration abilities were inhibited in pBudCE4.1-antiCatB transfected group compared with those in the non-transfection and mock-vehicle transfected groups $[(52.80 \pm 7.76) \text{ vs } [124.00 \pm 44.54], [116.80 \pm 32.87], P < 0.01]$ ; or $[60.25 \pm 8.73] \text{ vs } [132.50 \pm 12.15], [119.20 \pm 25.13], P < 0.01]$ . Conclusion: The expression of antisense CatB RNA can inhibit the growth, adhesion, invasion and migration abilities of MDA-MB-231 cell in vitro.

Keywords: [breast neoplasms](#) [cathepsin B\(CatB\)](#) [antisense RNA](#) [transfection](#) [adhesion](#) [invasion](#)

[查看全文](#) [查看/发表评论](#) [下载PDF阅读器](#)