



617-623. MicroRNA-10a通过调控MMP的表达促进胶质瘤细胞侵袭[J]. 范立刚, 吴德刚, 孙立华, 王颖毅, 梅赞, 尤永平, 刘宁. 中国肿瘤生物治疗杂志, 2011, 18(6)

MicroRNA-10a通过调控MMP的表达促进胶质瘤细胞侵袭 [点此下载全文](#)

[范立刚](#) [吴德刚](#) [孙立华](#) [王颖毅](#) [梅赞](#) [尤永平](#) [刘宁](#)

南京医科大学 第一附属医院 神经外科, 江苏 南京 210029; 南京医科大学 第一附属医院 神经外科, 江苏 南京 210029; 南京医科大学 第一附属医院 神经外科, 江苏 南京 210029; 南京医科大学 第一附属医院 神经外科, 江苏 南京 210029; 南京医科大学 第一附属医院 神经外科, 江苏 南京 210029; 南京医科大学 第一附属医院 神经外科, 江苏 南京 210029; 南京医科大学 第一附属医院 神经外科, 江苏 南京 210029

**基金项目:** 国家自然科学基金资助项目 (No. 3067216, No. 30872657); 江苏省333工程重点人才项目 (No. 0508RS08); 江苏省医学重点人才项目 (No. RC2007061)

DOI:

**摘要:**

目的: 研究microRNA-10a (miR-10a) 对人脑胶质瘤细胞系U87MG侵袭性的影响。方法: 脂质体包被miR-10a反义寡聚核苷酸 (miR-10a antisense oligodeoxynucleotide, miR-10a-anti-ODN), 转染胶质瘤U87MG细胞, 并设无义miRNA转染组和空白对照组, 流式细胞术和荧光显微镜检测miR-10a-anti-ODN对U87MG细胞的转染效率, 流式细胞术检测转染miR-10a-anti-ODN后U87MG细胞的凋亡和细胞周期, MTT法检测U87MG细胞的增殖, Transwell实验检测miR-10a-anti-ODN对U87MG细胞迁移和侵袭的影响; RT-PCR和Western blotting法分别检测U87MG细胞中 MMP-2、MMP-9、MMP-14 mRNA及蛋白的表达。结果: 转染miR-10a-anti-ODN后, U87MG细胞的增殖、周期和凋亡无明显改变, U87MG细胞的侵袭 $(87 \pm 7.1)$  vs  $(155 \pm 3.7)$ 、 $(149 \pm 6.6)$ 个细胞,  $P < 0.05$ 和迁移 $(78.0 \pm 5.2)$  vs  $(150.3 \pm 3.7)$ 、 $(147.3 \pm 6.6)$ 个细胞,  $P < 0.05$ 能力明显下降, 侵袭相关因子 MMP-2、MMP-9、MMP-14 的mRNA及蛋白表达水平也明显下降。结论: miR-10a通过调控 MMP-2、MMP-9、MMP-14 的表达促进胶质瘤U87MG细胞的侵袭, miR-10a可能是胶质瘤治疗的潜在靶点。

**关键词:** [microRNA-10a](#) [反义寡聚核苷酸](#) [胶质瘤](#) [侵袭](#) [迁移](#) [基质金属蛋白酶](#)

MicroRNA-10a promotes invasion of glioma cells by regulating MMP expression [Download Fulltext](#)

[FAN Li-gang](#) [WU De-gang](#) [SUN Li-hua](#) [WANG Ying-yi](#) [MEI Zan](#) [YOU Yong-ping](#) [LIU Ning](#)

Department of Neurosurgery, First Affiliated Hospital of Nanjing Medical University, Nanjing 210029, Jiangsu, China; Department of Neurosurgery, First Affiliated Hospital of Nanjing Medical University, Nanjing 210029, Jiangsu, China; Department of Neurosurgery, First Affiliated Hospital of Nanjing Medical University, Nanjing 210029, Jiangsu, China; Department of Neurosurgery, First Affiliated Hospital of Nanjing Medical University, Nanjing 210029, Jiangsu, China; Department of Neurosurgery, First Affiliated Hospital of Nanjing Medical University, Nanjing 210029, Jiangsu, China; Department of Neurosurgery, First Affiliated Hospital of Nanjing Medical University, Nanjing 210029, Jiangsu, China; Department of Neurosurgery, First Affiliated Hospital of Nanjing Medical University, Nanjing 210029, Jiangsu, China

Fund Project: Project supported by the National Natural Science Foundation of China (No. 30672165, No. 30872657), the "333" Key Talent Foundation of Jiangsu Province (No. 0508RS08), and the Medical Major Talent Foundation of Jiangsu Province (No. RC2007061)

**Abstract:**

Objective : To investigate the effect of microRNA-10a (miR-10a) on invasion of glioma cell line U87MG. Methods: miR-10a antisense oligodeoxynucleotides (miR-10a-anti-ODN) enveloped with liposome were transfected into glioma cell line U87MG, and nonsense miRNA and blank control were used as control groups. Flow cytometry and fluorescence microscope were employed to determine the transfection efficiency of miR-10a-anti-ODN in U87MG cells; flow cytometry was employed to detect the proliferation of U87MG cells; Transwell assay were applied to ascertain effect of miR-10a-anti-ODN on migration and invasion of U87MG cells; and RT-PCR and Western blotting were used to examine expressions of mRNA and protein of MMP-2, MMP-9 and MMP-14 . Results: miR-10a-anti-ODN transfection had no obvious effect on proliferation, cell cycle and apoptosis of U87MG cells; however, invasion and migration of U87MG cells was significantly decreased (invasion:  $[87 \pm 7.1]$  vs  $[155 \pm 3.7]$ ,  $[149 \pm 6.6]$ ,  $P < 0.05$ ; migration:  $[78.0 \pm 5.2]$  vs  $[150.3 \pm 3.7]$ ,  $[147.3 \pm 6.6]$ ), and mRNA and protein expressions of MMP-2, MMP-9 and MMP-14 were also significantly decreased. Conclusion: miR-10a can promote invasion of glioma cell line U87MG through upregulating MMP-2, MMP-9 and MMP-14 expressions, which might be a target in glioma therapy.

Keywords: [microRNA-10a](#) [antisense oligodeoxynucleotide](#) [glioma](#) [invasion](#) [migration](#) [matrix metalloproteinase](#)

[查看全文](#) [查看/发表评论](#) [下载PDF阅读器](#)