

# miR-139-5p靶向GPR56抑制骨肉瘤细胞增殖、迁移和侵袭的实验研究

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**Title:** Experimental study of miR-139-5p inhibiting proliferation,migration and invasion of osteosarcoma cells by targeting GPR56

**作者:** 赵玉果<sup>1</sup>; 陶海云<sup>2</sup>; 叶向阳<sup>1</sup>; 王海羽<sup>1</sup>  
1.南阳市中心医院骨一科; 2.肿瘤科,河南 南阳 473000

**Author(s):** Zhao Yuguo<sup>1</sup>; Tao Haiyun<sup>2</sup>; Ye Xiangyang<sup>1</sup>; Wang Haiyu<sup>1</sup>  
1.Department of Orthopaedics;2.Department of Oncology,Nanyang Central Hospital,Henan Nanyang 473000,China.

**关键词:** miR-139-5p; GPR56; 骨肉瘤; 增殖; 迁移; 侵袭

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**摘要:** 目的: 研究miR-139-5p对骨肉瘤细胞增殖、迁移和侵袭的影响,并探讨其机制。方法: 运用qRT-PCR检测软骨肉瘤细胞中miR-139-5p、GPR56的mRNA表达; Western blot检测细胞中GPR56的蛋白表达; 将miR-139-5p组(转染miR-139-5p mimics)、miR-NC组(转染miR-NC)、si-NC组(转染si-NC)、si-GPR56组(转染si-GPR56)、miR-139-5p+pcDNA3.1组(miR-139-5p mimics和pcDNA3.1共转染)、miR-139-5p+pcDNA3.1-GPR56组(miR-139-5p mimics和pcDNA3.1-GPR56共转染),均以脂质体法转染至U-2OS细胞; MTT法检测各组细胞的增殖; Transwell检测各组细胞的迁移、侵袭。结果: 与人正常成骨细胞hFOB1.19相比,人骨肉瘤细胞U-2OS中miR-139-5p表达显著降低,GPR56表达显著升高( $P < 0.05$ )。过表达miR-139-5p、敲减GPR56均可明显抑制U-2OS细胞增殖、迁移、侵袭; GPR56是miR-139-5p的靶点。过表达GPR56可逆转miR-139-5p对U-2OS细胞增殖、迁移、侵袭的抑制作用。结论: miR-139-5p可抑制骨肉瘤细胞增殖、迁移、侵袭,其机制可能与靶向GPR56有关,将可为骨肉瘤的治疗提供新靶点。

**Abstract:** Objective: To study the effects of miR-139-5p on proliferation,migration and invasion of osteosarcoma cells and explore its mechanism.Methods: qRT-PCR was used to detect the mRNA expression of miR-139-5p and GPR56 in chondrosarcoma cells.Western blot was used to detect the protein expression of GPR56 in cells.The miR-139-5p group (transfected miR-139-5p mimics),miR-NC group (transfected miR-NC),si-NC group (transfected si-NC),si-GPR56 group (transfected si-GPR56),miR-139-5p+pcDNA3.1 group (co-transfected miR-139-5p mimics and pcDNA3.1),miR-139-5p+pcDNA3.1-GPR56 (co-transfected miR-139-5p mimics and pcDNA3.1-GPR56),all transfected to U-2OS cells by liposome method.MTT assay was used to detect the proliferation of each group.Transwell was used to detect the migration and invasion of each group.Results: Compared with human normal osteoblasts hFOB1.19,the expression of miR-139-5p was significantly decreased and the expression of GPR56 was significantly increased in human osteosarcoma cell U-2OS ( $P < 0.05$ ).Overexpression of miR-139-5p and knockdown of GPR56 significantly inhibited proliferation,migration and invasion of U-2OS cells.GPR56 was a target of miR-139-5p.Overexpression of GPR56 reversed the inhibitory effect of miR-139-5p on proliferation,migration and invasion of U-2OS cells.Conclusion: miR-139-5p can inhibit the proliferation,migration and invasion of osteosarcoma cells.The mechanism may be related to targeting GPR56,which will provide a new target for the treatment of osteosarcoma.

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