

# miR-149-3p通过靶向S100A4抑制膀胱癌细胞的增殖、迁移和侵袭

《现代肿瘤医学》[ISSN:1672-4992/CN:61-1415/R] 期数: 2019年01期 页码: 12-17 栏目: 论著(基础研究) 出版日期: 2018-11-30

**Title:** miR-149-3p inhibits the proliferation, migration and invasion of bladder cancer cells by targeting S100A4

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**关键词:** 膀胱癌; miR-149-3p; S100A4; 侵袭行为

**Keywords:** bladder cancer; miR-149-3p; S100A4; invasion behavior

**分类号:** R737.14

**DOI:** 10.3969/j.issn.1672-4992.2019.01.004

**文献标识码:** A

**摘要:** 目的: 探讨miR-149-3p通过靶向S100A4抑制膀胱癌细胞的增殖、迁移和侵袭行为及其作用机制。方法: qPCR检测miR-149-3p的过表达情况; CCK-8细胞增殖实验检测miR-149-3p对膀胱癌细胞的增殖能力的影响; 划痕愈合实验和Transwell侵袭实验检测miR-149-3p对膀胱癌细胞迁移和侵袭能力的影响; 双荧光素酶报告基因检测miR-149-3p与S100A4的相互作用; Transwell侵袭实验检测S100A4的异位表达逆转miR-149-3p的抗肿瘤作用。结果: miR-149-3p过表达显著抑制培养的膀胱癌细胞48小时的生长能力; 过表达miR-149-3p后在膀胱癌细胞中具有抗迁移和侵袭作用; miR-149-3p能与S100A4的3' UTR特异性结合, 调控S100A4的表达活性; S100A4的过表达可以逆转由miR-149-3p引起的细胞迁移和侵袭能力的抑制。结论: miR-149-3p在膀胱癌的发生发展过程中起重要作用, 可以通过靶向调节S100A4的表达影响膀胱癌细胞的增殖和迁移。

**Abstract:** Objective: To investigate the inhibitory effect of miR-149-3p on the proliferation, migration and invasion of bladder cancer by targeting S100A4 and its mechanism. Methods: qPCR was used to detect the overexpression of miR-149-3p. The proliferation of bladder cancer cells was detected by CCK-8 cell proliferation assay. Scratch healing assay and Transwell invasion assay were used to detect the effect of miR-149-3p on the migration and invasion ability of bladder cancer cells. Dual luciferase reporter gene was used to detect miR-149-3p and S100A4 interaction. Transwell invasion assay examined the ectopic expression of S100A4 reversing the antitumor effect of miR-149-3p. Results: Overexpression of miR-149-3p significantly inhibited the growth of cultured bladder cancer cells for 48 hours. The miR-149-3p overexpression showed anti-migration and invasion in bladder cancer cells. miR-149-3p can specifically bind to the 3' UTR of S100A4 and regulate the expression of S100A4. Overexpression of S100A4 can reverse the inhibition of cell migration and invasion capacity caused by miR-149-3p. Conclusion: miR-149-3p plays an important role in the development and progression of bladder cancer. It may affect the proliferation and migration of bladder cancer cells by regulating the expression of S100A4.

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**备注/Memo:** 四川省科技计划项目(编号: 2014SZ0023-2)

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更新日期/Last Update: 2018-11-30