

论著

NR2E1促神经母细胞瘤细胞分裂增殖的效应研究

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**摘要:** 目的: 探讨核蛋白样转录因子核受体亚家族2组E成员1(nuclear receptor subfamily 2 group E member 1,NR2E1)对儿童神经母细胞瘤细胞株IMR-32 生长、分裂、增殖的影响。方法: 应用Lipofectamine<sup>TM</sup>2000将构建的针对核蛋白样转录因子NR2E1的shRNA质粒载体转染神经母细胞瘤细胞株IMR32,并通过细胞计数法观察细胞生长抑制效应,采用细胞免疫荧光染色检测神经母细胞瘤细胞株IMR32细胞分裂蛋白的表达。结果: 核蛋白样转录因子NR2E1的 shRNA质粒转染神经母细胞瘤细胞株IMR32 48 h后,该细胞株生长缓慢;相关细胞核分裂蛋白表达受到明显的抑制。结论: 核蛋白样转录因子NR2E1的 shRNA干扰质粒转染神经母细胞瘤细胞株IMR32后,抑制了神经母细胞瘤细胞IMR32的分裂和增殖。

**关键词:** 神经母细胞瘤 核蛋白样转录因子NR2E1 细胞分裂

Effect of NR2E1 on the division and proliferation of neuroblastoma cells

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**Abstract:** Objective: To explore the effects of nuclear protein-like transcription factor nuclear receptor subfamily 2 group E member 1 (NR2E1) on the growth, division, and proliferation of neuroblastoma cell line IMR32. Methods: A NR2E1 shRNA plasmid vector was constructed and transfected into neuroblastoma cell line IMR32 using lipofedamineZ<sup>TM</sup>2000. Subsequent cell growth was measured by cell counting and the protein expression of somatic nuclear division was examined by immunofluorescent staining. Results: At 48 h after the neuroblastoma cells IMR32 were transfected with NR2E1-shiRNA vector, the related nuclear division protein and the proliferation of the transfected cells IMR32 were remarkably depressed. Conclusion: Cells division and proliferation of neuroblastoma cell line IMR32 is inhibited through transfection with the NR2E1-shiRNA plasmid vector.

**Keywords:** neuroblastoma nuclear receptor subfamily 2 group E member 1 cell division

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参考文献:

1. Li W, Sun G, Yang S, et al. Nuclear receptor TLX regulates cell cycle progression in neural stem cells of the developing brain[J]. Mol Endocrinol, 2008, 22(1): 56-64.
2. Stenman JM, Wang B, Campbell K. Tlx controls proliferation and patterning of lateral telencephalic progenitor domains[J]. J Neurosci, 2003, 23(33): 10568-10576.
3. Qu Q, Sun G, Li W, et al. Orphan nuclear receptor TLX activates Wnt/beta-catenin signalling to stimulate neural stem cell proliferation and self-renewal[J]. Nat Cell Biol, 2010, 12(1): 31-40.

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4. Liu HK, Wang Y, Belz T, et al. The nuclear receptor *tailless* induces long-term neural stem cell expansion and brain tumor initiation[J]. *Genes Dev*, 2010,24(7): 683-695.
5. Sun G, Yu RT, Evans RM, et al. Orphan nuclear receptor TLX recruits histone deacetylases to repress transcription and regulate neural stem cell proliferation[J]. *Proc Natl Acad Sci USA*, 2007, 104(39):15282-15287.
6. Sun LC, Mackey LV, Luo J, et al. Targeted chemotherapy using a cytotoxic somatostatin conjugate to inhibit tumor growth and metastasis in nude mice[J]. *Clin Med Oncol*, 2008, 2(8):491-499.
7. Kim Y. The effects of nutrient depleted microenvironments and delta-like 1 homologue (DLK1) on apoptosis in neuroblastoma[J]. *Nutr Res Pract*, 2010,4(6):455-461.
8. Niu W, Zou Y, Shen C, et al. Activation of postnatal neural stem cells requires nuclear receptor TLX[J]. *J Neurosci*, 2011,31(39):13816-13828.
9. Liu HK, Belz T, Bock D, et al. The nuclear receptor *tailless* is required for neurogenesis in the adult subventricular zone[J]. *Genes Dev*, 2008, 22(18):2473-2478.
10. Belz T, Liu HK, Bock D, et al. Inactivation of the gene for the nuclear receptor *tailless* in the brain preserving its function in the eye[J]. *Eur J Neurosci*, 2007,26(8):2222-2227.
11. Nakagawara A, Ohira M. Comprehensive genomics linking between neural development and cancer: neuroblastoma as a model[J]. *Cancer Lett*, 2004, 204(2):213-224.

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