

# 长链非编码RNA FOXD2-AS1在骨肉瘤细胞中的表达及功能

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**Title:** The expression and function of lncRNA FOXD2-AS1 in osteosarcoma cells

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**关键词:** 长链非编码RNA; 骨肉瘤; 表达; 增殖; 凋亡

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**摘要:** 目的: 探讨长链非编码RNA FOXD2-AS1在骨肉瘤细胞中的表达谱及其功能。方法: 前期对5对组织(骨肉瘤组织和正常组织)进行转录组学测序筛选出差异表达的lncRNAs,并筛选出上调变化的具有研究意义的前五位lncRNAs。通过荧光定量PCR进一步在骨肉瘤组织及正常组织内验证lncRNA FOXD2-AS1差异表达这一趋势,利用siRNA技术干扰其表达,筛选出干扰lncRNA FOXD2-AS1效率最高的两条siRNAs, CCK-8法及流式细胞术检测敲减lncRNA后细胞增殖及凋亡是否发生变化。结果: 转录组学测序筛选出上调变化明显的前5位lncRNAs,并进一步通过实时荧光定量PCR显示lncRNA FOXD2-AS1在骨肉瘤组织内高表达, CCK-8法及流式细胞术结果显示该高表达的lncRNA FOXD2-AS1促进骨肉瘤细胞增殖,且抑制骨肉瘤细胞的凋亡。结论: 骨肉瘤与正常组织相比,存在明显的高表达lncRNAs,且高表达的lncRNA FOXD2-AS1促进骨肉瘤的增殖并抑制其凋亡,在骨肉瘤进展中发挥至关重要的作用。

**Abstract:** Objective: To analyze lncRNA expression profiles and function of long non-coding RNA FOXD2-AS1 in osteosarcoma cells. Methods: In this research, 5 pairs of tissues (osteosarcoma and normal tissues) were detected for high-throughput transcriptome sequencing to screen for differentially expressed lncRNAs. The first five lncRNAs with research significance were selected. The difference expression of lncRNA FOXD2-AS1 in osteosarcoma tissues and normal tissues was further verified by fluorescence quantitative PCR. The expression of lncRNA FOXD2-AS1 was interfered by small interfering RNA technology, and two siRNAs interfering with the expression efficiency of lncRNA FOXD2-AS1 were screened out. CCK-8 and flow cytometry were used to detect the changes in cell proliferation and apoptosis after lncRNA downregulation. Results: Transcriptome sequencing screened out the first 5 lncRNAs with significant upregulated changes. Fluorescence quantitative PCR showed that lncRNA FOXD2-AS1 was highly expressed in osteosarcoma tissues. CCK-8 and flow cytometry showed that this highly expressed lncRNA FOXD2-AS1 promoted proliferation of osteosarcoma cells and inhibited apoptosis of osteosarcoma cells. Conclusion: Compared with normal tissues, osteosarcoma tissues has high expression of lncRNAs. High expression of lncRNA FOXD2-AS1 can promote proliferation and inhibit apoptosis of osteosarcoma cells.

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