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临床医学

SOX4基因在前列腺癌中的表达及二烯丙三硫对其表达的调节作用

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摘要：

目的 研究SOX4基因在前列腺癌患者中的表达；探讨二烯丙三硫 (DATS)对SOX4表达阳性前列腺癌细胞的生物学作用及对SOX4表达的调节作用。方法 采用免疫组织化学PV 9000二步法检测141例前列腺癌患者SOX4的表达，观察其与临床病理指标和预后的关联。采用不同浓度(0、20、40、60μmol/L)DATS处理前列腺癌Vcap细胞株，细胞增殖活性MTS法测定Vcap细胞的增殖能力；细胞体外侵袭实验检测40μmol/L DATS对Vcap细胞侵袭能力的作用；实时定量PCR (Real time PCR)检测40μmol/L DATS作用后，Vcap细胞中SOX4 mRNA的表达水平变化。结果 SOX4蛋白在21%(28/135)的前列腺癌患者中过表达，与Gleason评分、远处转移呈正相关(P<0.05)。SOX4是影响患者生存的独立预后因素。体外实验显示，20~60μmol/L DATS对前列腺癌细胞株Vcap的生长有较明显的抑制作用，且呈浓度和时间依赖性。40μmol/L DATS明显抑制Vcap细胞的侵袭能力，并在mRNA水平上下调SOX4的表达。结论 SOX4的过表达提示前列腺癌患者预后不良。DATS抑制前列腺癌Vcap细胞的增殖和侵袭能力，并在mRNA水平上显著下调SOX4的表达。

关键词： SOX4基因；二烯丙三硫；前列腺肿瘤；预后；侵袭

Expression of SOX4 and its regulation by diallyl trisulfide in prostate cancer

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Abstract:

Objective To characterize the expression of SOX4 in prostate cancer patients and investigate the effect of diallyl trisulfide (DATS) on proliferation and invasion of SOX4 positive prostate cancer cells and its role in regulation of SOX4. Methods The PV9000 two-step immunohistochemical method was utilized to examine the expression of SOX4 protein in 141 prostate cancer patients. Correlation of SOX4 expression with clinicopathological parameters and prognosis were also analyzed. Prostate cancer cell line Vcap, which demonstrated overexpression of SOX4, was treated with various concentrations of DATS (0,20,40,60μmol/L), followed by MTS assay to determine its cellular proliferation; Matrigel invasion assay was used to assess the effect of 40μmol/L DATS on the invasive capacity of Vcap cells. Real time-PCR was performed to detect mRNA expression level of SOX4 by 40μmol/L DATS treatment. Results Overexpression of SOX4 protein was preset in 21% (28/135) of prostate cancer patients, and significantly correlated with high Gleason score and the presence of distant metastasis (P<0.05). SOX4 was an independent prognostic factor for prostate cancer. In vitro experiments revealed that 20~60μmol/L DATS significantly inhibited proliferation of Vcap cells in a dose -and time-dependent manner. The invasive capacity of Vcap cells was inhibited by 40μmol/L DATS. Meanwhile, SOX4 expression was significantly decreased at mRNA level by 40μmol/L DATS treatment. Conclusion Overexpression of SOX4 is associated with poor prognosis in prostate cancer patients. DATS significantly inhibites proliferation and invasion of Vcap cell line, and down-regulates SOX4 expression at mRNA level.

Keywords: Genes, SOX4; Diallyl Trisulfide; Prostate neoplsams; Prognosis; Invasion

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