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## 二甲双胍抑制IL-6诱导的LNCaP增殖及上皮到:

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Title: Metformin inhibits IL-6-induced LNCaP proliferation and epithelial-mesenchymal transition

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关键词: 前列腺癌; 二甲双胍; 上皮-间质转化; LNCaP

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摘要: 目的 初步探讨二甲双胍抑制前列腺癌发展的作用。 方法 使用慢病毒感染构建IL-6过表达细胞株 LNCaP-IL-6 (IL-6过表达病毒转染)和LNCaP-ctr (空病毒转染), 运用激光共聚焦扫描确定转染效果, ELISA检测LNCaP、LNCaP-IL-6和LNCaP-ctr细胞IL-6分泌水平, 倒置显微镜观察细胞形态。实验分为LNCaP-ctr组、LNCaP-IL-6组、LNCaP-ctr+二甲双胍组和LNCaP-IL-6+二甲双胍组, MTT技术检测相对细胞数量, 流式细胞技术检测二甲双胍对细胞周期的影响。实验分为LNCaP-IL-6和LNCaP-IL-6+二甲双胍组, 运用细胞迁移实验检测两组细胞迁移速度, Western blot技术检测两组细胞TWIST和E-Cadherin表达水平。 结果 激光共聚焦扫描和ELISA检测证明IL-6过表达细胞株LNCaP-IL-6构建成功, LNCaP-IL-6细胞IL-6分泌水平约为LNCaP-ctr的5000倍。MTT实验显示第5天LNCaP-IL-6相对细胞数量约为LNCaP-ctr的

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1.4倍, 处理组的LNCaP-IL-6相对细胞数量约为LNCaP-ctr的1.6倍; 流式细胞仪检测显示二甲双胍阻滞LNCaP的细胞周期为S期。细胞形态学观察和Western blot检测证实IL-6诱导LNCaP发生上皮-间质转化, 细胞迁移实验显示二甲双胍可抑制LNCaP-IL-6细胞的迁移, Western blot进一步证实二甲双胍降低LNCaP-IL-6 TWIST表达及升高E-Cadherin表达。 结论 二甲双胍能够抑制IL-6诱导的LNCaP细胞的上皮-间质转化。

**Abstract:** **Objective** To investigate the inhibitory effect of metformin on prostate cancer development. **Methods** Lentivirus transfection was used to construct a LNCaP cell line with stable over-expression of interleukin 6 (IL-6)(LNCaP-IL-6), and LNCaP cells transfected with normal lentivirus were used as control (LNCaP-ctr). Laser scanning confocal microscopy and ELISA were used to confirm IL-6 over-expression in the LNCaP cell line. The morphology of the cells was observed under an inverted microscope. The following experiments were carried out in the four groups: LNCaP-ctr group, LNCaP-ctr with metformin group, LNCaP-IL-6 group and LNCaP-IL-6 with metformin group. MTT assay was used to detect cell relative number, flow cytometry was used to analyze cell cycle, and wound healing assay was used to detect the invasive ability of LNCaP-IL-6. Western blotting was used to detect E-Cadherin and TWIST expression levels in LNCaP-ctr cells and LNCaP-IL-6 cells. **Results** Laser scanning confocal microscopy and ELISA confirmed that the LNCaP-IL-6 cells were successfully constructed, and the secretion level of IL-6 in LNCaP-IL-6 cells was 5 000 times more than that in LNCaP-ctr cells. MTT assay indicated that the relative number of LNCaP-IL-6 cells was 1.4 times as much as that of LNCaP-ctr cells, and was 1.6 times as much as that in the LNCaP-IL-6 with metformin group after cultured for 5 d. Flow cytometry results indicated that LNCaP cell cycle was arrested at S phase. Morphology observation and Western blot analysis showed epithelia-mesenchymal transition in LNCaP-IL-6 cells. Wound healing assay proved that metformin inhibited LNCaP-IL-6 migration. Western blot analysis showed metformin could decrease TWIST expression and increase E-Cadherin expression. **Conclusion** Metformin reverses IL-6-induced EMT in LNCaP cells.

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参考文献/REFERENCES: