

[1]王强,余洁,王航,等.LXRs激动剂T0901317通过PI3K/Akt增强人脐静脉内皮细胞的增殖能力[J].第三军医大学学报,2012,34(06):481-484.

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LXRs激动剂T0901317通过PI3K/Akt增强人脐静脉内皮细胞的增殖能力(PDF)

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Title: Liver X receptors agonist T0901317 promotes human umbilical vein endothelial cell proliferation *via* activation of PI3K/Akt pathway

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关键词: 肝X受体; 人脐静脉内皮细胞; 细胞增殖; PI3K/Akt信号通路

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摘要: 目的 观察肝X受体 (liver X receptors, LXRs) 激动剂T0901317对人脐静脉内皮细胞 (human umbilical vein endothelial cell, HUVEC) 增殖活性的影响。 方法 体外分离和培养原代HUVEC, 不同浓度的T0901317 (0、0.5、2、5 $\mu\text{mol/L}$) 干预HUVEC 48 h后, 采用MTS法检测HUVEC增殖情况; Western blot检测磷酸化Akt (Ser⁴⁷³) 及总Akt的表达。 结果 T0901317 (0-5 $\mu\text{mol/L}$) 呈浓度依赖性的促进HUVEC的增殖 ($P<0.01$) 和上调HUVEC中p-Akt-Ser⁴⁷³的表达 ($P<0.01$), PI3K抑制剂LY294002 (10 $\mu\text{mol/L}$) 和基因转录抑制剂放线菌素-D (actinomycin D, Act-D, 5 $\mu\text{g/ml}$) 可以阻断T0901317 (5 $\mu\text{mol/L}$) 上调p-Akt-Ser⁴⁷³的作用 ($P<0.01$), 提示T0901317通过基因转录调节的方式激活PI3K/Akt信号, 此外, PI3K抑制剂LY294002 (10 $\mu\text{mol/L}$) 预处理可以逆转T0901317 (5 $\mu\text{mol/L}$) 促HUVEC增殖作用 ($P<0.01$)。 结论 LXRs激动剂T0901317可通过激活PI3K/Akt信号通路增强HUVEC的增殖能力。

Abstract: Objective To observe the effect of liver X receptors (LXRs) agonist T0901317 on human umbilical vein endothelial cells (HUVECs) proliferation. Methods The HUVECs isolated and cultured *in vitro* were treated with different concentrations of T0901317 (0, 0.5, 2 and 5 $\mu\text{mol/L}$) for 48 h. The proliferation of HUVECs was evaluated by MTS assay. The expressions of phospho-Akt (Ser⁴⁷³) and total Akt were detected by Western blotting. Results The HUVEC proliferation was significantly promoted and the phospho-Akt (Ser⁴⁷³) expression was significantly upregulated by T0901317 in a dose-dependent manner ($P<0.01$). The upregulation of phospho-Akt (Ser⁴⁷³) induced by T0901317 could be blocked by PI3K inhibitor LY294002 (10 $\mu\text{mol/L}$) and gene transcription inhibitor actinomycin D (Act-D) (5 $\mu\text{g/ml}$) ($P<0.01$), indicating T0901317 activated PI3K/Akt pathway through regulating gene transcription. Moreover, pretreatment of HUVECs with LY294002 (10 $\mu\text{mol/L}$) could reverse T0901317-induced HUVEC proliferation ($P<0.01$). Conclusion The LXRs agonist T0901317 can promote HUVEC proliferation through the activation of PI3K/Akt pathway.

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