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ROCK- I 选择性抑制剂Y-27632对人Tenon囊成纤维细胞增殖、凋亡

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Title: Effect of Y-27632, a selective inhibitor of ROCK-I, on proliferation, apoptosis and adhesion of human ocular Tenon' s capsular fibroblasts

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关键词: Y-27632; 人Tenon囊成纤维细胞; 增殖; 凋亡; 黏附性

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摘要: 目的 观察ROCK- I 选择性抑制剂Y-27632对体外培养的人眼Tenon囊成纤维细胞 (ocular Tenon capsule fibroblasts, OTFs) 增殖、凋亡和黏附性的影响。 方法 体外培养的第4~6代OTFs经溶血磷脂酸 (lysophosphatidic acid, LPA) 诱导后, 不同浓度Y-27632处理, 采用MTT测定细胞增殖抑制率和细胞黏附抑制率, 未经LPA诱导OTFs细胞同时采用Annexin V-FITC/PI双标记流式细胞术测定细胞凋亡率, 以及细胞平板克隆增殖实验测定不同浓度Y-27632组OTFs细胞增殖克隆形成率。 结果 6、30、150、750 $\mu\text{mol/L}$ Y-27632各组经LPA诱导的OTFs细胞增殖抑制 $D(490)$ 与LPA组比较, 差异均有统计学意义 ($P<0.05$, $P<0.01$), OTFs细胞黏附抑制 $D(490)$ 与LPA组比较, 同样具有统计学差异 ($P<0.05$, $P<0.01$)。随着Y-27632浓度增加, 细胞凋亡率相应增加。未经LPA诱导的OTFs细胞克隆形成率随着Y27632浓度的增高而降低。 结论 Y-27632有效抑制LPA诱导的OTFs增殖和细胞间黏附, 诱导细胞早期凋亡。

Abstract: Objective To investigate the effect of Y-27632, a selective inhibitor of ROCK-I, on the proliferation, apoptosis and adhesion of human ocular Tenon' s capsular fibroblasts (OTFs) *in vitro*. Methods After induced by lysophosphatidic acid (LPA), the fourth to sixth passages of OTFs were exposed to 6, 30, 150 and 750 $\mu\text{mol/L}$ of Y-27632 for 48 h, respectively, and MTT assay was applied to determine the inhibition ratios of cell proliferation and adhesion. OTFs without LPA induction were treated with different concentrations of Y-27632, and Annexin V-FITC/PI double labeling flow cytometry was applied to determine cell apoptotic rate. The cell cloning efficiency was calculated by cell plate clonal expansion experiment. Results The proliferation inhibition $D(490)$ and adhesion inhibition $D(490)$ of OTFs treated with LPA+Y-27632 were significantly greater than those of LPA-induced OTFs ($P<0.05$, $P<0.01$). Cell apoptotic rate increased along with the increase of Y-27632 concentrations, and the cloning efficiency of OTFs without LPA induction decreased along with the increase of Y-27632 concentrations. Conclusion Y-27632 can effectively inhibit both proliferation and adhesion of LPA-induced OTFs, and induce early apoptosis of OTFs without LPA induction.

参考文献/REFERENCES

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