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青蒿琥酯对人胚肺成纤维细胞Caspase-3表达的影响

Effect of Artesunate on the Expression of Caspase-3 in Human Embryonic Lung Fibroblasts

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中文摘要:

目的 研究青蒿琥酯对人胚肺成纤维细胞(human embryonic lung fibroblast, HELF)系HFL-I细胞体外生长的影响,为青蒿琥酯抗纤维化提供实验依据。方法 采用CCK-8法检测青蒿琥酯对体外培养的HFL-I细胞生长的影响,用流式细胞术测定细胞凋亡率;RT-PCR法测定凋亡相关蛋白Caspase-3的mRNA表达水平,Western blot法分析Caspase-3蛋白的表达情况。结果 青蒿琥酯呈浓度依赖性抑制HFL-I细胞增殖,HFL-I细胞经青蒿琥酯作用后细胞主要停滞于G1期,凋亡率明显增加($P<0.01$),Caspase-3 mRNA的表达显著高于对照组,Caspase-3蛋白的表达亦显著高于对照组。结论 青蒿琥酯很可能通过上调Caspase-3 mRNA及蛋白的表达水平,进而抑制HFL-I细胞的增殖,并促进HFL-I细胞的凋亡,从而发挥抗肺纤维化作用。

英文摘要:

To study the effect of artesunate on the growth of human embryonic lung fibroblast HFL-I cells *in vitro* and provide experimental data for anti-fibrosis activity of artesunate. METHODS CCK-8 assay was used to determine the effect of artesunate on the growth of HFL-I cells *in vitro*. Apoptosis ratio was examined by flow cytometry (FCM). The mRNA level of Caspase-3, one of apoptosis related proteins, were assessed by RT-PCR. The expression of Caspase-3 protein was detected by Western blot. RESULTS Artesunate has a significantly inhibitory effect on the proliferation of HFL-I cells in a dose-dependent manner *in vitro*. Flow cytometry assay demonstrated a higher distribution in G1 phase of HFL-I cells with artesunate. And apoptosis rate of HFL-I cells was significantly increased in artesunate-treated group compared with control group ($P<0.01$). RT-PCR analysis showed the levels of Caspase-3 mRNA were significantly increased in artesunate-treated group, compared with control group. Western blotting also showed a significant enhancement of Caspase-3 protein levels in artesunate-treated group, when compared to control group. CONCLUSION Artesunate may exert marked anti-pulmonary fibrosis effect by up-regulating the mRNA and protein level of Caspase-3, which could induce the growth inhibition and apoptosis in HFL-I cells.

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