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丹酚酸A诱导HepG2细胞凋亡及抑制c-Met表达

Salvianolic Acid A Induces Apoptosis and Inhibits the C-Met Expression in Hepatocellular Carcinoma HepG2 Cell Line

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中文关键词： 丹酚酸A 肝癌HepG2细胞 c-Met 细胞凋亡

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中文摘要:

目的 通过研究丹酚酸A(salvianol acid A，SalA)对肝癌HepG2细胞株c-Met蛋白表达的影响，探讨SalA抑制肝癌细胞增殖，诱导细胞凋亡的可能作用机制。方法 以肝癌HepG2细胞株为研究对象，采用MTT法及流式细胞术检测SalA作用后细胞存活、增殖及凋亡情况；同时运用Western blot法及PCR法检测HepG2细胞c-Met及其下游信号通路中关键蛋白和基因表达的改变。结果 肝癌HepG2细胞经SalA处理后，其细胞增殖显著抑制，细胞凋亡比例亦升高，且呈浓度依赖性；同时HepG2细胞中c-Met及其下游信号分子AKT的磷酸化水平显著下调，凋亡相关蛋白Bax、caspase-3和caspase-9的表达亦明显上调。结论 SalA能有效抑制肝癌HepG2细胞的增殖并诱导细胞凋亡，其作用机制可能与其抑制HepG2细胞中c-Met蛋白及其下游信号通路中AKT蛋白的磷酸化水平有关。

英文摘要:

OBJECTIVE To study the effect of salvianol acid A (SalA) on the protein expression of proto-oncogene c-Met in human hepatocellular carcinoma HepG2 cell line, and explore the potential mechanism of the anti-proliferation and induce-apoptosis effects of SalA on HepG2 cells. METHODS MTT and Flow cytometry methods were used to analyze the anti-proliferation and induce-apoptosis effects of SalA on HepG2 cells. Western blotting and PCR methods were used to analyze the mRNA and protein expression of c-Met and the downstream proteins. RESULTS SalA could effectively inhibit the proliferation of HepG2 cells in vitro, and induce the cell apoptosis. The inhibitory effect was in a dose and incubation time dependent manner. The protein expression and the tyrosine kinase activity of proto-oncogene c-Met and the downstream signal protein

AKT were decreased significantly in HepG2 cells after treatment with SalA. The expression of apoptosis-related proteins (Bax, caspase-3 and caspase-9) could also be inhibited significantly. CONCLUSION SalA can inhibit the proliferation of HepG2 cells and the mechanism may be related with inhibiting the activation of proto-oncogene c-Met and the downstream protein AKT, which triggering the cells apoptosis.