



138-142. 白藜芦醇对肺腺癌A549细胞增殖、黏附与侵袭的影响[J]. 陈海霞, 杨耀琴, 陶惠红, 朱颖超, 周爽, 王和勇. 中国肿瘤生物治疗杂志, 2012, (2)

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基金项目: 上海市科委科技支撑计划医学引导项目 (No. 09411964800)

DOI:

摘要:

目的: 研究白藜芦醇 (resveratrol, Res) 对肺腺癌A549细胞增殖, 黏附及侵袭的影响。方法: 用不同剂量的Res作用于A549细胞, MTT法测定A549细胞的增殖水平 (成纤维3T3细胞为对照), 流式细胞仪检测A549细胞的细胞周期和凋亡, 体外黏附实验测定A549细胞的黏附能力, Transwell实验测定A549细胞的侵袭能力, 荧光免疫细胞化学方法测定A549细胞中MMP-2和TIMP-2蛋白的表达。结果: Res以剂量 (20~80 $\mu\text{mol/L}$) 依赖和时间 (0~72 h) 依赖方式抑制A549细胞的增殖, 同样条件对3T3细胞增殖无影响。10、20、40、80 $\mu\text{mol/L}$ Res作用后, A549细胞的凋亡率分别为 (34.9 \pm 0.91)%、(41.33 \pm 0.13)%、(45.47 \pm 0.87)%和 (59.46 \pm 0.59)%。经20 $\mu\text{mol/L}$ Res处理48 h后, S期A549细胞比例为 (56.41 \pm 1.67)%, 细胞周期阻滞在S期。20 $\mu\text{mol/L}$ 以上的Res可引起A549细胞的黏附力下降、侵袭力降低 ($P < 0.05$); 同时, A549细胞内MMP-2蛋白表达下调, 而TIMP-2蛋白表达增加。结论: Res抑制肺腺癌A549细胞的增殖、黏附和侵袭, 其机制可能涉及对MMP-2和TIMP-2表达的双向调控。

关键词: [白藜芦醇](#) [肺癌](#) [增殖](#) [凋亡](#) [黏附](#) [侵袭](#) [MMP-2](#) [TIMP-2](#)

Effects of resveratrol on proliferation, adhesion and invasion of A549 lung adenocarcinoma cells [Download Fulltext](#)

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Fund Project: Project supported by the Foundation for Medical Guide Program of Shanghai Science and Technology Commission (No. 09411964800)

Abstract:

Objective: To study the effect of resveratrol (Res) on proliferation, adhesion and invasion of A549 lung adenocarcinoma cells. Methods: A549 cells were treated with different doses of Res. The cell proliferation, cell cycle and apoptosis, adhesive ability, and invasion of A549 cells were examined by methyl thiazolyltetrazolium (MTT) assay, flow cytometry, Boyden chamber assay and Transwell assay respectively (3T3 cells as a normal cell control). The expressions of MMP-2 and TIMP-2 proteins in A549 cells were assayed by immunofluorescent cytochemistry. Results: Res inhibited the proliferation of A549 cells in a dose (20-80 $\mu\text{mol/L}$) and time (0-72 h) dependent manner. No significant inhibitory effect on 3T3 cell proliferation was observed at the same dose. Res induced the apoptosis of A549 cells with the apoptotic rates of (34.9 \pm 0.91)%, (41.33 \pm 0.13)%, (45.47 \pm 0.87)% and (59.46 \pm 0.59)% respectively when Res being 10, 20, 40, 80 $\mu\text{mol/L}$. A549 cells were arrested at the S phase of cell cycle, and the cell proportion in the S phase was (56.41 \pm 1.67)% when treated with 20 $\mu\text{mol/L}$ Res, the adhesion and invasion ability of A549 cells was effectively decreased after treatment with 20 $\mu\text{mol/L}$ -80 $\mu\text{mol/L}$ Res ($P < 0.05$), accompanied by a significant down-regulation of MMP-2 expressions and up-regulation of TIMP-2 expressions. Conclusion: Res can inhibit the proliferation, adhesion and invasion of A549 lung adenocarcinoma cells, which may be related with the bilateral regulation on MMP-2 and TIMP-2 expressions.

Keywords: [resveratrol](#) [lung carcinoma](#) [proliferation](#) [apoptosis](#) [adhesion](#) [invasion](#) [MMP-2](#) [TIMP-2](#)

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