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rSIFN-co对乳腺癌MCF-7/ADR细胞增殖、凋亡和表柔比星耐药性的影响 点此下载全文

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摘要：

目的：观察重组复合高效干扰素（recombinant super-compound interferon，rSIFN-co）在体外对多药耐药（multi-drug resistance，MDR）的人乳腺癌MCF-7/ADR细胞的增殖、凋亡和表柔比星耐药性的影响，并探讨其可能的作用机制。方法：分别使用rSIFN-co、表柔比星及rSIFN-co联合表柔比星处理MCF-7/ADR细胞，以MCF-7细胞作为对照，MTT法和流式细胞术分别检测rSIFN-co对MCF-7/ADR细胞增殖、凋亡的影响，免疫细胞化学方法检测rSIFN-co对MCF-7/ADR细胞中P-gp表达水平的影响。结果：各组药物作用24 h后，0.078 μg/ml rSIFN-co单独作用和0.02 μg/ml rSIFN-co联合15.00 μg/ml 表柔比星对MCF-7/ADR细胞体外生长的抑制率即显著高于100.00 g/ml的表柔比星\[（29.7±1.4）%、（23.0±2.1）% vs （17.1±1 5）%，均 P <0.01\]，各组药物对MCF-7/ADR细胞的抑制率呈时间、浓度依赖性；rSIFN-co联合表柔比星作用72 h后表现出协同作用。表柔比星作用24 h后， MCF-7/ADR细胞凋亡率与对照组相比无显著变化（ P >0.05）；而rSIFN-co单用或联合表柔比星作用24 h后，凋亡率即较单用表柔比星组显著增加\[（35.37±1.40）%、（61.37±1.76）% vs （9.80±1.66）%，均 P <0.01\]，其促凋亡的作用呈时间依赖性；并且rSIFN-co与表柔比星具有协同作用。表柔比星组P-gp的表达较对照组显著升高\[（4.17±0.0252） vs （3.94±0.0088），P <0.01\]，rSIFN-co组与联合组P-gp的表达均显著下调\[（2.59±0.0260）、（2.62±0 0100） vs （3.94±0.0088），均 P <0.01）；联合组与单用rSIFN-co相比无显著差异（ P =0.948）。结论： rSIFN-co能够抑制MCF-7/ADR细胞增殖并促进其凋亡，同时可能通过下调P-gp蛋白的表达来增加其对表柔比星的敏感性。

关键词：复合高效干扰素 乳腺癌 增殖 凋亡 表柔比星 多药耐药

Effect of recombinant super-compound interferon on proliferation, apoptosis and resistance to epirubicin of human breast cancer cell MCF-7/ADR Download Fulltext

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Abstract:

Objective:To observe the effect of recombinant super-compound interferon (rSIFN-co) on the proliferation, apoptosis and resistance to epirubicin of human breast cancer MCF-7/ADR cells (a multi-drug resistance \[MDR\] strain), and to investigate the possible mechanism. Methods: MCF-7/ADR cells were treated with rSIFN-co, epirubicin alone or combaination, and the MCF-7 cells were used as control. MTT assay and flow cytometry were performed to detect the effect of rSIFN-co on the proliferation and apoptosis of MCF-7/ADR cells, respectively. Immunohistochemical staining was used to detect the influence of rSIFN-co on the P-gp expression level in MCF-7/ADR cells. Results: After treated by different drugs for 24 h, the growth inhibition rate of MCF-7/ADR cells treated by 0.078 μg/ml rsIFN-co or 0.02 μg/ml rsIFN-co combined with 15.00 μg/ml epirubicin was significantly higher than that treated by 100.00 μg/ml epirubicin (\[29.7±1.4\]%, \[23.0±2.1\]% vs \[17.1±1.5\]%; all P <0.01). The inhibition effect of each drug had a dose and time dependence. Synergistic effect of rSIFN-co with epirubicin was also observed after being treated for 72 h. Epirubicin showed no significant effect on MCF-7/ADR cells′ apoptosis after treated for 24 h (P >0.05); however, use of rSIFN-co alone or combined with epirubicin significantly enhanced the apoptosis rate than did epirubicin alone after 24 h (\[35 37±1.40\]%, \[61.37±1.76\]% vs \[9.80±1.66\]%; all P <0.01), and the effects on cell apoptosis had a time dependence (P <0.01); and the synergistic effect of rSIFN-co with epirubicin was also observed. Compared with the control group (3.94±0.0088), the P-gp expression was increased in the epirubicin group (4.17±0.0252, P <0.01), but decreased in rSIFN-co group (2.59±0.0260, P <0.01) and the combined group (2.62±0.0100, P <0.01).There was no significant difference between the combined group and rsIFN-co group in P-gp expression (P =0.948). Conclusion: rSIFN-co can inhibit cell growth, induce cell apoptosis of human breast cancer MCF-7/ADR cells, and reverse the multi-drug resistance by decreasing the expression of P-gp.

Keywords:recombinant super-compound interferon（rSIFN-co） breast cancer proliferation apoptosis epirubicin multi-drug resistance

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