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摘要:

目的:研究抑制促分裂原活化蛋白激酶/细胞外信号调节激酶 激酶3(mitogen activated protein/extracellular signal regulated kinase kinase 3, MEKK3)基因表达促进TRAIL诱导乳腺癌MCF 7细胞凋亡的作用,寻找乳腺癌临床治疗新策略。方法:应用MTT法检测TRAIL对MCF 7细胞生长的抑制作用。合成MEKK3 siRNA,应用脂质体介导MEKK3 siRNA转染入乳腺癌细胞MCF 7,以RT-PCR和Western blotting法检测MCF 7细胞 MEKK3 mRNA和蛋白的表达。应用MTT法和流式细胞术检测MEKK3 siRNA与TRAIL联合处理后MCF 7细胞的增殖和凋亡。结果:TRAIL具有抑制MCF 7细胞增殖作用,但其抑制作用较弱。MEKK3 siRNA转染后能有效而稳定地抑制MCF 7细胞中 MEKK3 mRNA和蛋白的表达($P < 0.01$)。TRAIL与MEKK3 siRNA联合处理MCF 7细胞较TRAIL单独处理更明显地抑制细胞增殖活力($P < 0.05$),更明显地增加细胞凋亡率($P < 0.01$)。结论:siRNA沉默 MEKK3 基因能显著促进TRAIL对乳腺癌MCF 7细胞凋亡的诱导作用,为探讨乳腺癌治疗新方案提供了实验依据。

关键词: [乳腺癌细胞](#) [TRAIL](#) [siRNA](#) [促分裂原活化蛋白/细胞外信号调节激酶 激酶3\(MEKK3\)](#) [凋亡](#)

targeted siRNA combined with TRAIL induces apoptosis of breast cancer cell line MCF 7 [Download Fulltext](#)

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Abstract:

Objective: To investigate the promoting effect of silencing mitogen activated protein/ERK kinase kinase 3 (MEKK3)gene on TRAIL-induced apoptosis of breast cancer MCF 7 cells, so as to search for a novel clinical treatment strategy for breast cancer. Methods: TRAIL was used to treat MCF 7 cells and the growth inhibition of MCF 7 cells was determined by a methyl thiazolyl tetrazolium (MTT) assay. Chemically synthesized small interfering RNA (siRNA) targeting MEKK3 was transfected into MCF 7 cells using DharmaFECT Transfection reagent, and the expression of MEKK3 mRNA and protein was detected by RT-PCR and Western blotting. The proliferation and apoptosis of MCF 7 cells were analyzed by MTT and flow cytometry (FCM) after treatment with MEKK3 siRNA combined with TRAIL. Results: TRAIL inhibited the proliferation of MCF 7 cells, but the inhibitory effect was weak. Transfection with MEKK3 siRNA effectively and stably inhibited the expression of MEKK3 mRNA and protein expression ($P < 0.01$). Combination of TRAIL and MEKK3 siRNA more severely inhibited the proliferation of MCF 7 cells compared with TRAIL alone ($P < 0.05$); besides, the combination also increased the apoptosis rate of MCF 7 cells ($P < 0.05$). Conclusion: Silencing of MEKK3 gene with siRNA can greatly promote TRAIL induced apoptosis of breast cancer cells MCF 7, which lays an experimental foundation for new treatment method of breast cancer.

Keywords: [breast cancer cell](#) [TRAIL](#) [siRNA](#) [mitogen activated protein/extracellular signal regulated kinase kinase 3\(MEKK3 \)](#) [apoptosis](#)

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