



490-495. 雌激素受体亚型对乳腺癌MCF-7细胞生长及微环境中Th平衡的影响[J]. 牛秀琰, 叶路, 毛立群, 王越. 中国肿瘤生物治疗杂志, 2011, 18(5)

雌激素受体亚型对乳腺癌MCF-7细胞生长及微环境中Th平衡的影响 [点此下载全文](#)

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基金项目: 国家自然科学基金资助项目 (No.81041071); 天津市自然科学基金资助项目(No.08JCYBJC06900); 武警医学院科学技术研究面上项目资助 (No.WY200802)

DOI:

摘要:

目的: 研究雌激素受体 (estrogen receptor, ER) 亚型对人乳腺癌细胞MCF-7的生长及Th1/Th2类细胞因子分泌的影响。方法: 采用RNA干扰技术沉默MCF-7细胞中 ER α 或ER β 的表达, 获得ER α /ER β 不同表达状态的MCF-7细胞。应用MTT法、流式细胞术、RT-PCR法分别检测MCF-7细胞的增殖、细胞周期和凋亡抑制基因的表达, ELISA法检测细胞上清中IFN- γ 和IL-4的分泌水平。结果: 经RNA干扰后MCF-7细胞的ER α 或ER β 蛋白表达水平分别下降了(77.7 \pm 3.3)%和(68.3 \pm 2.1)%。与对照组相比, ER α 基因沉默后, MCF-7细胞生长减慢 (P < 0.05), 受阻于G₀~G₁期, 凋亡抑制基因 XIAP 的表达水平降低为对照组的(43.0 \pm 2.0)%, IFN- γ 分泌水平增加至对照组的(1.89 \pm 0.34)倍; ER β 基因沉默促进MCF-7细胞的生长 (P < 0.05), S期细胞比例增加, 凋亡抑制基因 Bcl-2、Bcl-xl、XIAP 的表达水平分别升高至对照组的(1.28 \pm 0.21)、(1.61 \pm 0.32)和(1.65 \pm 0.29)倍, IFN- γ 分泌水平降低为对照组的(28.0 \pm 4.0)%。结论: ER亚型的表达状态可影响MCF-7细胞的生长, 并通过调节IFN- γ 的自分泌水平诱导微环境发生Th偏移。

关键词: [雌激素受体](#) [RNA干扰](#) [Th平衡](#) [乳腺癌](#) [ER \$\alpha\$](#) [ER \$\beta\$](#)

Effects of estrogen receptor subtype on growth of breast cancer MCF-7 cells and Th balance in microenvironment [Download Fulltext](#)

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Fund Project: Project supported by the National Natural Science Foundation of China (No.81041071), the Natural Science Foundation of Tianjin (No.08JCYBJC06900), and the Science and Technology Research Program of Medical College of Chinese People's Armed Police Forces (No.WY200802)

Abstract:

Objective: To study estrogen receptor (ER) subtype on the growth of breast cancer cell line MCF-7 and the secretion of Th1 and Th2 cytokines in MCF-7 tumor microenvironment. Methods: ER α or ER β expression in MCF-7 cells was silenced by RNA interference and MCF-7 cells with different ER α /ER β expression status were obtained. MTT test, flow cytometry and RT-PCR assay were used to detect proliferation, cell cycle and expression of apoptosis suppressor genes. Secretion of IFN- γ and IL-4 in cell supernatant were analyzed by ELISA assay. Results: After RNA interference, protein levels of ER α or ER β in MCF-7 cells decreased by (77.7 \pm 3.3)% or (68.3 \pm 2.1)%, respectively. Compared to control group, after knocking down ER α gene expression, MCF-7 cells grew slower (P < 0.05) and were arrested at phase G₀~G₁, expression of apoptosis suppressor gene XIAP decreased by (43.0 \pm 2.0)% and the level of IFN- γ increased by (1.89 \pm 0.34) times. However, after knocking down the ER β gene expression, MCF-7 grew faster (P < 0.05), and the proportion of cells entering S phase increased, the expression of apoptosis suppressor genes Bcl-2, Bcl-xl and XIAP increased by (1.28 \pm 0.21) times, (1.61 \pm 0.32) times and (1.65 \pm 0.29) times, respectively, while the level of IFN- γ decreased by (28.0 \pm 4.0)%, compared to the control group. Conclusion: The expression status of ER subtype can affect the growth of MCF-7 cells and induce the Th bias in microenvironment by regulating the autocrine level of IFN- γ .

Keywords: [estrogen receptor\(ER\)](#) [RNA interference](#) [Th balance](#) [breast cancer](#) [ER \$\alpha\$](#) [ER \$\beta\$](#)

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