

槲皮素增强乳腺癌细胞化疗敏感度的研究

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Quercetin Sensitizes Breast Cancer Cells Chemotherapy in Vitro

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摘要 目的

探讨槲皮素(quercetin, Que)对乳腺癌细胞化疗药物敏感度的影响及其可能的机制。方法MTT 法检测不同浓度 Que 对人乳腺癌 MCF-7 细胞生长的影响, 单用阿霉素(adriamycin, ADR) 或 ADR 联合无毒剂量 Que 作用于人乳腺癌 MCF-7 细胞, MTT 法检测药物对细胞的增殖抑制作用, 流式细胞法检测细胞凋亡率; Transwell小室法检测细胞侵袭能力的变化; RT-PCR法及Western blot法分别检测缺氧诱导因子-1 α (HIF-1 α) mRNA水平和蛋白水平的表达变化。结果不高于 0.7 μ M Que对细胞生长无影响。与单用ADR组相比较, 0.7 μ M Que与ADR联用可提高ADR对人乳腺癌MCF-7细胞的增殖抑制率、诱导其细胞凋亡、降低其体外侵袭和转移能力、下调HIF-1 α mRNA和蛋白的表达。结论Que能够增强人乳腺癌MCF-7细胞化疗敏感度, 其机制可能与下调该细胞HIF-1 α 的mRNA和蛋白表达有关。

关键词: 槲皮素 乳腺癌 化疗增敏

Abstract: Objective

To study the effects and its mechanism of Que on the chemotherapeutic sensitivity of human breast cancer cells.MethodsThe effect of Que on the growth of human breast cancer MCF-7 cells was examined by MTT assay.MCF-7 cells were treated by ADR with or without non-cytotoxic dose of Que.Then, the proliferative capacity of the cells was measured using MTT assay, the cell cycle was analysed using flow cytometry, the invasive capacity was measured by transwell chamber invasive model, HIF-1 α mRNA level was determined by RT-PCR, and HIF-1 α protein expression was detected by Western blot assay.ResultsLess than 0.7 μ M Que had non-cytotoxic effect on the growth MCF-7 cells.Compared with ADR alone action on MCF-7 cells, 0.7 μ M Que could enhance inhibitory rate of cell growth, more apoptotic cells, inhibitory capability, and expression of HIF-1 α mRNA and protein with the same dose of ADR.ConclusionQue has potential application in the treatment of chemotherapy-resistant breast cancer.

Key words: Quercetin Breast cancer Chemotherapy


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[1] Greco O, Marples B, Joiner MC, et al.How to overcome (and exploit) tumor hypoxia for targeted gene therapy [J].J Cell Physiol. 2003, 197 (3):312-325. 

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作者相关文章

- [2] Brown JM. Exploiting the hypoxic cancer cell: mechanisms and therapeutic strategies [J]. *Mol Med Today*, 2000, 6(4):157-162. 
- [3] Semenza, GL. Hypoxia, clonal selection, and the role of HIF-1 in tumor progression [J]. *Crit Rev Biochem Mol Biol*, 2000, 35(2): 71-103. 
- [4] Harris AL. Hypoxia - a key regulatory factor in tumor growth [J]. *Nature Reviews Cancer*, 2002, 2(1): 38-47. 
- [5] Papandreou I, Krishna C, Kaper F, et al. Anoxia is necessary for tumor cell toxicity caused by a low-oxygen environment [J]. *Cancer Res*, 2005, 65(8), 3171-3178.
- [6] Schindl M, Schoppmann SF, Samonigg H, et al. Overexpression of hypoxia-inducible factor 1 α is associated with an unfavorable prognosis in lymph node-positive breast cancer [J]. *Clin Cancer Res*, 2002, 8(6), 1831-1837.
- [7] Okada K, Osaki M, Araki K, et al. Expression of hypoxia-inducible factor (HIF-1 α), VEGF-C and VEGF-D in non-invasive and invasive breast ductal carcinomas [J]. *Anticancer Res*, 2005, 25(4):3003-3009.
- [8] Mu oz-Nájjar UM, Neurath KM, Vumbaca F, et al. Hypoxia stimulates breast carcinoma cell invasion through MT1-MMP and MMP-2 activation [J]. *Oncogene*, 2006, 25 (16):2379-2392. 
- [9] Li J, Shi M, Cao Y, et al. Knockdown of hypoxia-inducible factor-1 α in breast carcinoma MCF-7 cells results in reduced tumor growth and increased sensitivity to methotrexate [J]. *Biochem Biophys Res Commun*, 2006, 342(4):1341-1351. 
- [10] Li SZ, Li K, Zhang JH, et al. Effect of quercetin on proliferation and apoptosis of human breast cancer cell [J]. *Zhongguo Pu Wai Ji Chu Yu Lin Chuang Za Zhi*, 2009, 16(2):124-128.
- 李世正, 李昆, 张俊华, 等. 槲皮素在人乳腺癌细胞中抑制增殖和诱导凋亡的作用 [J]. *中国普外基础与临床杂志*, 2009, 16(2) : 124-128.]
- [11] Li K, Li SZ, Zhang YL, et al. Effect of quercetin on proliferation and invasion of human breast carcinoma cell line MDA-MB-435S [J]. *Zhong Liu Fang Zhi Yan Jiu*, 2009, 36(7):549-551.
- 李昆, 李世正, 张蕴莉, 等. 槲皮素对人乳腺癌细胞MDA-MB-435S增殖及侵袭力的影响 [J]. *肿瘤防治研究*, 2009, 36(7) : 549-551.] 浏览
- [1] 张挺丽, 王彬, 吴锦昌, 周俊东, 张玲. HER3在乳腺癌中的表达及临床意义 [J]. *肿瘤防治研究*, 2012, 39(5): 538-541.
- [2] 张兰胜, 陈冬波, 贾晓民, 王保庆, 凌桂琴, 张世强. GII1蛋白在乳腺癌组织中的表达及其与血管生成的关系 [J]. *肿瘤防治研究*, 2012, 39(5): 532-534.
- [3] 李星, 龚益平, 熊斌. 三阴性乳腺癌的临床病理特征及预后分析 [J]. *肿瘤防治研究*, 2012, 39(5): 535-537.
- [4] 杨润祥, 任宏轩, 聂建云, 刘林, 董超, 高春林, 庄莉, 姚萍. 两种不同给药方式下表阿霉素治疗乳腺癌近期疗效观察 [J]. *肿瘤防治研究*, 2012, 39(5): 573-576.
- [5] 杨蓉, 付泽鸿, 张斌, 杨少萍, 张丹, 李玉霞. 依托妇幼卫生服务体系建立乳腺癌筛查机制 [J]. *肿瘤防治研究*, 2012, 39(5): 582-585.
- [6] 肖宇, 李惠平, 雷玉涛, 赵红梅, 王晶. 178例三阴性乳腺癌的临床病理特征及生存分析 [J]. *肿瘤防治研究*, 2012, 39(4): 412-416.
- [7] 范威, 潘翠萍, 张懿敏, 廖仕翀, 魏文, 马彪, 孙圣荣. 内质网应激对乳腺癌MCF-7细胞CCL5表达的影响 [J]. *肿瘤防治研究*, 2012, 39(4): 385-388.
- [8] 李瑞亮, 周涛, 周冰峰, 李云涛, 李海平. 原发性乳腺癌组织中雄激素受体的表达及其与临床病理指标的关系 [J]. *肿瘤防治研究*, 2012, 39(3): 292-294.
- [9] 张攀, 吴江, 皇甫超申. 浸润性乳腺癌上皮-间质转化1例 [J]. *肿瘤防治研究*, 2012, 39(3): 363-364.
- [10] 纪术峰; 杨华锋; 吴爱国. PGRMC1参与调控乳腺癌细胞增殖及化疗敏感度的实验 [J]. *肿瘤防治研究*, 2012, 39(2): 123-126.
- [11] 罗平; 罗浩军; 杨光伦; 涂刚. 新型雌激素受体GPER在乳腺癌组织中的表达及与预后的相关性 [J]. *肿瘤防治研究*, 2012, 39(2): 181-184.
- [12] 王艳阳; 折虹; 丁喆; 詹文华. Basal-like型乳腺癌临床特征与生存分析 [J]. *肿瘤防治研究*, 2012, 39(2): 177-180.
- [13] 刘志容; 吴诚义. MMP-3、Vimentin联合检测与乳腺癌侵袭转移的关系 [J]. *肿瘤防治研究*, 2012, 39(2): 222-224.
- [14] 潘翠萍; 范威; 马彪. 乳腺癌干细胞研究进展 [J]. *肿瘤防治研究*, 2012, 39(2): 234-237.
- [15] 裴新红; 杨振; 姜丽娜. 淋巴结分类情况下不同类型三阴性乳腺癌的预后分析 [J]. *肿瘤防治研究*, 2012, 39(1): 51-53.