



## 国产雷帕霉素对人淋巴瘤细胞Raji增殖的影响

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### Effect of Rapamycin in Proliferation of Human Burkitt Lymphoma Cells

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#### 摘要 目的

探讨国产雷帕霉素(宜欣可)对人淋巴瘤细胞株Raji细胞体外生长及对mTOR/p70S6K信号通路的影响。方法MTT法检测不同浓度(0、1、5、10、20、40、50、100 nmol/L)国产雷帕霉素作用不同时间(24、48、72 h)对Raji细胞增殖的影响。光学显微镜观察Raji细胞形态学变化。流式细胞仪测定国产雷帕霉素对Raji细胞周期分布和凋亡的影响。Western blot方法检测国产雷帕霉素处理前后对Raji细胞mTOR、p70S6K、p-p70S6K蛋白的影响。结果国产雷帕霉素对Raji细胞增殖有明显的抑制作用(不同浓度 $P<0.01$ 或 $P<0.05$ ),呈现明显的剂量-效应和时间-效应依赖关系。国产雷帕霉素明显抑制Raji细胞周期发展( $P<0.05$ ),但没有发生明显的凋亡( $P>0.05$ )。0、10、50、100 nmol/L国产雷帕霉素作用于Raji细胞的mTOR、p-p70S6K,其蛋白量随药物浓度增大而降低( $P<0.05$ ),p70S6K随药物浓度增大而升高( $P<0.05$ )。结论人淋巴瘤细胞株Raji中存在mTOR/p70S6K信号通路激活状态,宜欣可抑制该通路激活并通过阻滞细胞周期发展抑制Raji细胞增殖。

关键词: 国产雷帕霉素 Raji细胞 细胞增殖 mTOR p-p70S6K

#### Abstract: Objective

To investigate rapamycin effects on growth inhibition and mTOR/p70S6K signaling pathway of human Burkitt lymphoma cell line Raji cells. Methods Proliferations of Raji cells under different of concentrations (0, 1, 5, 10, 20, 40, 50 and 100nmol/L) and different times (24, 48 and 72 h) were investigated by MTT assay. Apoptosis and cell cycle were analyzed via flowcytometry. The morphological alterations were confirmed by the optical microscope. The expressions of mTOR, p70S6K, p-p70S6K proteins were examined by Western blot technique in the rapamycin-treated and untreated Raji cells. Results Rapamycin inhibited the proliferation of Raji cells at concentrations more than 5nmol/L ( $P<0.05$ ), in a dose and time dependent manner. After treatment with rapamycin, the number of cells at S phase and G2/M phase was decreased gradually ( $P<0.05$ ), but significantly increased at G0/G1 phase in dose and time dependent manners ( $P<0.05$ ). However, evident apoptosis did not observed in Raji cells. The expression of mTOR, p-p70S6K proteins was decreased gradually while the expression of p70S6K protein was increased in a concentration-dependent manner ( $P<0.05$ ). Conclusion mTOR/p70S6K signaling pathway was constitutively activated in Raji cells and Rapamycin inhibited Raji cell proliferation by arrest at G0/G1 phase and inhibition of mTOR/p70S6K signaling pathway.

Key words: Rapamycin Raji cell Proliferation mTOR p-p70S6K

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- [1] 牛国晓;李洁. 半枝莲抗肿瘤机制研究进展[J]. 肿瘤防治研究, 2012, 39(2): 231-233.
- [2] 何伶俐;高倩颖;侯亚义;. 灵芝孢子油对人胃腺癌细胞BGC823的抑制作用[J]. 肿瘤防治研究, 2011, 38(7): 761-763.
- [3] 董林;葛瑞民;祁楠;沈丽. shRNA腺病毒介导的JNK1 RNAi抑制U87MG人胶质瘤细胞的增殖[J]. 肿瘤防治研究, 2011, 38(7): 767-769.
- [4] 刘媛媛;贾秀红;李建厂;韩兆东;谢绍华. Apoloon反义寡核苷酸对K562细胞增殖和凋亡的影响[J]. 肿瘤防治研究, 2011, 38(6): 636-638.
- [5] 王政华;牟平;刘晓梅;朱志图. 靶向Bcl-xL基因siRNA在前列腺癌细胞增殖和凋亡中的作用[J]. 肿瘤防治研究, 2011, 38(5): 509-511.
- [6] 高曰文;朱晨宇;朱耀明;胡汉卿;王艳林;秦 焯. 盐酸普鲁卡因对人结肠癌HT-29细胞的作用及其机制[J]. 肿瘤防治研究, 2011, 38(2): 137-140.
- [7] 曾波航;庄莹;陈静琦;江素华;曾木圣. 雷帕霉素对肺癌细胞mTOR信号通路相关蛋白表达的作用[J]. 肿瘤防治研究, 2011, 38(10): 1105-1108.
- [8] 王琳;吴拥军;刘新奎. 热化疗联合作用抑制人小细胞肺癌细胞增殖的机制[J]. 肿瘤防治研究, 2011, 38(1): 1-4.
- [9] 余尚扬;蓝秀万;何 敏;王秋雁. RNA干扰沉默 $\alpha 1$ , 3岩藻糖转移酶-VII基因对人肝癌细胞增殖的影响[J]. 肿瘤防治研究, 2010, 37(5): 507-510.
- [10] 夏启松;刘静维;孙仁宇;修瑞娟. 大黄素对人肺腺癌A549细胞体外增殖凋亡及VEGF和TNF- $\alpha$ 分泌的影响[J]. 肿瘤防治研究, 2010, 37(4): 387-391.
- [11] 朱 伦;祁昔琴;吕胜祥. p-mTOR、GST- $\pi$ 和Ki-67在食管鳞状细胞癌中的表达及其相关性[J]. 肿瘤防治研究, 2010, 37(4): 428-430.
- [12] 彭秋平;梁后杰;冯青青;柯传庆. 阻断mTOR表达对结肠癌LoVo细胞增殖的影响及机制[J]. 肿瘤防治研究, 2010, 37(3): 291-293.
- [13] 王永谦;陆建荣. 4-HPR促髓母细胞瘤细胞凋亡的机制[J]. 肿瘤防治研究, 2010, 37(1): 5-8.
- [14] 朱 红;王学伟;袁 君;张 静. 靶向survivin基因siRNA对宫颈癌细胞放射敏感性影响的实验 [J]. 肿瘤防治研究, 2010, 37(1): 30-33.
- [15] 聂应明;戴碧涛. 低氧对白血病细胞株Raji细胞侵袭转移能力的影响[J]. 肿瘤防治研究, 2010, 37(1): 42-46.