[1]杨林,吴小候,罗春丽,等.肾癌细胞来源的exosomes诱导Jurkat T细胞凋亡[J].第三军医大学学报,2013,35(05):426-430.

Yang Lin,Wu Xiaohou,Luo Chunli,et al.Exosomes derived from renal cancer cells induce Jurkat T cell apoptosis in vitro[J].J Third Mil Med Univ,2013,35(05):426-430.

点击复制

肾癌细胞来源的exosomes诱导Jurkat T细胞凋亡(PD

《第三军医大学学报》[ISSN:1000-5404/CN:51-1095/R] 卷: 35 期数: 2013年第05期 页码: 426-430 栏目: 论著 出版日期: 2013-03-15

Title: Exosomes derived from renal cancer cells induce Jurkat T cell apoptosis *in vitro*

作者: 杨林; 吴小候; 罗春丽; 王丹; 陈力学

重庆医科大学：附属第一医院泌尿外科，检验医学院实验诊断教研室，附属第一医院实验研究中心

Author(s): Yang Lin; Wu Xiaohou; Luo Chunli; Wang Dan; Chen Lixue

Department of Urology, Experimental Research Center,First Affiliated Hospital; Department of Laboratory Diagnosis, College of Laboratory Medicine, Chongqing Medical University, Chongqing, 400016, China

关键词: 肾癌; exosomes; 免疫逃逸; 凋亡

Keywords: renal cancer; exosomes; immune escape; apoptosis

分类号: R730.23; R730.3; R737.11

文献标志码: A

摘要: 目的 体外研究肾癌786-0细胞来源的exosomes介导肿瘤免疫逃逸的机制。 方法 采用CCK-8法检测肾癌786-0细胞来源的exosomes对Jurkat T细胞生长的影响，瑞氏-姬姆萨染色检测Jurkat T细胞形态变化，Annexin V-FITC/PI双染色流式细胞术检测Jurkat T细胞凋亡率，ELISA法检测Jurkat T细胞分泌功能，可溶性Fas阻断实验检测exosomes对Jurkat T细胞凋亡率的影响，Western blot检测exosomes中FasL、及Jurkat T细胞caspase、Bax及Bcl-2蛋白的表达。 结果 肾癌786-0细胞来源的exosomes可抑制Jurkat T细胞生长，10 μg/mL exosomes作用于Jurkat T细胞24 h，生长抑制率为(19.64±0.92)%，72 h为(36.24±1.12)%；400 μg/mL exosomes作用24 h，生长抑制率为(55.96±1.35)%，72 h为(76.51±1.37)%。Exosomes诱导Jurkat T细胞凋亡，10 μg/mL exosomes作用于Jurkat T细胞8 h，凋亡率为(7.31±1.32)%，24 h为(20.19±1.47)%；400 μg/mL exosomes作用8 h，凋亡率为(27.28±1.29)%，24 h为(41.72±0.88)%。Exosomes还明显抑制Jurkat T细胞IL-2、IFN-γ、IL-6、IL-10的分泌水平；exosomes高表达FasL，可溶性Fas阻断实验能逆转Jurkat T细胞的凋亡；凋亡诱导过程中caspase-3、caspase-8、caspase-9被激活，Bax/Bcl-2上调。 结论 肾癌786-0细胞分泌的exosomes能诱导Jurkat T细胞凋亡，介导肿瘤免疫逃逸。

Abstract: Objective To investigate the underlying mechanism of exosomes derived from renal cancer cell lines 786-0 to mediate tumor immune escape *in vitro*.

Methods CCK-8 assay was used to determine the effects of exosomes on proliferation in Jurkat T cells. Morphological changes were by wright-giemsa staining;flow cytometry with Annexin V-FITC/PI double staining was used to detect the apoptosis;secretion functions of Jurkat T cell were detected by ELISA assay; effects of exosomes on apoptosis of Jurkat T cell were detected by soluble Fas block experiment; effects on the protein expression of FasL, caspase, Bax and Bcl-2 were assessed by Western blot analysis. Results Exosomes could inhibit Jurkat T cell proliferation, 10 μg/mL exosomes act on Jurkat T cell for 24 and 72 h, growth inhibition rate was (19.64±0.92)% and (36.24±1.12)%; while 400 μg/mL exosomes act on it for 24 h and 72 h, growth inhibition rate was (55.96±1.35)% and (76.51±1.37)% respectively. Exosomes could induce Jurkat T cell apoptosis, 10 μg/mL exosomes act on Jurkat T cell for 8 h, apoptosis rate was (7.31±1.32)%, extending this monitoring to 24 h, apoptosis rate was (20.19±1.47)%; while 400 μg/mL exosomes act on it for 8 and 24 h, apoptosis rate was (27.28±1.29)% and (41.72±0.88)% respectively. Exosomes also suppressed IL-2, IFN-γ, IL-6 and IL-10 secretion obviously. FasL was highly expressed in exosomes, soluble Fas block could reverse Jurkat T cell apoptosis. In this course, caspase-3, caspase-8, caspase-9 were activated, and the ratio of Bax/Bcl-2 increased. Conclusion Exosomes could inhibit the growth of Jurkat T cell and induce apoptosis.It could mediate tumor immune escape.

参考文献/REFERENCES:

杨林，吴小候，罗春丽，等. 肾癌细胞来源的exosomes诱导Jurkat T细胞凋亡[J].第三军医大学学报,2013,35(5):426-430.

相似文献/REFERENCES:

[1]王德林,米粲,陈在贤,等.As2O3诱导人肾癌786-0细胞凋亡及其分子机制的研究[J].第三军医大学学报,2007,29(17):1677.
WANG De-lin,MI Can,CHEN Zai-xian,et al.Arsenic trioxide induces apoptosis of human renal cell carcinoma 786-0 cells [J].J Third Mil Med Univ,2007,29(05):1677.
[2]李鸣,张红宾,张惠中.Bcl-2和Ki-67在肾细胞癌中的表达[J].第三军医大学学报,2006,28(17):1821.
[3]陈锦,叶锦,江军.腹腔镜肾癌根治性切除术护理体会[J].第三军医大学学报,2005,27(03):262.
[4]李戈,王明.应用RNAi技术沉默survivin基因对肾癌786-O细胞的影响[J].第三军医大学学报,2009,31(24):2444.
LI Ge,WANG Ming.Silencing survivin gene with RNAi inhibits proliferation of human renal cancer cell line 786-O[J].J Third Mil Med Univ,2009,31(05):2444.
[5]谭小军,胡自力,刘富.TLR4／MyD88信号通路在树突状细胞-肾癌786-0细胞株融合瘤苗中的作用[J].第三军医大学学报,2011,33(15):1576.
Tan Xiaojun,Hu Zili,Liu Fu.Role of TLR4/MyD88 signal transduction pathway in fusion vaccine by peripheral blood dendritic cells and renal cell carcinoma 786-0 cells[J].J Third Mil Med Univ,2011,33(05):1576.
[6]靳风烁.重视泌尿男生殖系肿瘤的基础与临床研究[J].第三军医大学学报,2009,31(13):1237.
[7]吴国英,李黔生,聂志林,等.5-氟尿嘧啶诱导肾癌细胞凋亡对Fas/FasL途径依赖性的研究[J].第三军医大学学报,2009,31(13):1254.
WU Guo-ying,LI Qian-sheng,NIE Zhi-lin,et al.Dependence of 5-Fluorouracil inducing cell apoptosis of renal cell carcinoma on Fas/FasL pathway[J].J Third Mil Med Univ,2009,31(05):1254.
[8]刘安全,吴小候,罗春丽.HepaCAM蛋白通过exosomes途径分泌到细胞外并抑制肿瘤细胞增殖[J].第三军医大学学报,2012,34(02):168.
Liu Anquan,Wu Xiaohou,Luo Chunli.HepaCAM secreted by renal cell carcinoma 786-0 cells through exosomes pathway inhibits cell proliferation[J].J Third Mil Med Univ,2012,34(05):168.
[9]张俊,吴小候,陈刚,等.肾细胞癌源性exosomes体外诱导单核细胞分化为PD-L1髓源性抑制细胞[J].第三军医大学学报,2012,34(02):172.
Zhang Jun,Wu Xiaohou,Chen Gang,et al.Renal cell carcinoma-derived exosomes induce monocytes to differentiate into PD-L1 myeloid derived suppressor cells in vitro[J].J Third Mil Med Univ,2012,34(05):172.