肿瘤防治研究
ZHONGLIU FANGZHI YANJIU
Cancer Research on Prevention and Treatment
中华人民共和国卫生部主管
中国抗癌协会系列杂志

肿瘤防治研究 2008, Vol. 35 Issue (04): 247-250 DOI:
基础研究

人胶质瘤细胞U251逃逸NK细胞免疫杀伤机制的初步探讨

周健; 梅家转; 郭坤元; 牛新清; 王杨; 涂三芳; 周雪云;

南方医科大学珠江医院血液科;

Aberrant Expression of NKG2D Ligand and High Expression HLA-Ⅰ Molecules May Contribute to Immune Escape from Natural Killer Cell-mediated Immune Surveillance of Malignant Gliomas

ZHOU Jian; MEI Jia-zhuan; GUO Kun-yuan; NIU Xin-qing; WANG Yang; TU San-fang; ZHOU Xue-yun

Department of Hematology; Zhujiang Hospital; The Southern Medical University; Guangzhou 510282; China;

- 摘要
- 参考文献
- 相关文章

全文: PDF (442 KB) HTML (0 KB) 输出: BibTeX | EndNote (RIS) 背景资料

摘要 目的 探讨人神经胶质瘤细胞U251逃逸同种异体NK细胞免疫杀伤的机制。方法以K562细胞为对照，应用LDH释放法检测不同效靶比时NK细胞体外杀伤U251细胞的活性。用RT-PCR检测K562和U251细胞MHC-Ⅰ类链相关分子A和B（MICA／B）、人巨细胞病毒糖蛋白UL16结合蛋白（ULBP1～3）基因，用流式细胞仪检测两细胞MICA／B、ULBP1～3和HLA-Ⅰ分子的表达情况。效靶比20：1时用单抗分别阻断K562和U251细胞表面MICA、MICB、ULBP1、ULBP2、ULBP3和HLA—Ⅰ类分子，观察NK细胞对其杀伤活性的变化。结果同一效靶比时NK细胞杀伤U251细胞的活性明显低于杀伤K562细胞的活性，两者之间差异有统计学意义（P〈0.05）；K562和U251细胞均表达基因MICA／B和ULBP1～3，但U251细胞仅低表达ULBP2分子。用单抗封闭MICA／B和ULBP1～3分子后，NK细胞对K562细胞的杀伤活性明显降低，对U251细胞的杀伤活性无明显改变。封闭HLA-Ⅰ类分子后NK细胞对U251细胞的杀伤活性明显上升，对K562细胞的杀伤活性无明显改变。结论U251细胞逃逸NK细胞免疫杀伤机制可能是由于U251细胞高表达HLA-Ⅰ类分子，不表达NKG2D的配体MICA／B和ULBP1～3。

关键词： 神经胶质瘤 自然杀伤细胞 自然杀伤细胞受体 细胞毒性试验 HLA-Ⅰ分子

Abstract： Objective To explore the mechanism of immune escape from natural killer(NK)cell-mediated immune surveillance of malignant gliomas.Methods We took K562 cells cytolysis sensitively to NK cell as positive control,cytotoxicities of NK cells isolated from 5 healthy volunteers against U251 cells were analyzed by LDH releasing assay at different effector-to-target cell ratios(E∶T).The genes and proteins expression of NKG2D ligands on K562 and U251 cell line were respectively measured by RT-PCR and flow cytometry.In blocking experiment s , mAbs of different N KG2D ligands and HLA2 Ⅰ molecules were added to the target cells at E∶T of 20∶1. Results Cytotoxicity of N K cells against K562 cells was much higher than that against U251 cells at the same ET ratio. There was a significant difference between them. The genes of N KG2D ligands were positive in K562 and U251 cells , All the proteins of N KG2D ligands were expressed on K562 cell surface , but noly ULBP2 molecule was found on U251 cell surface. In blocking experiment s , the cytotoxicity of N K cells against K562 cell was partially inhibited , that a2 gainst U251 cell was not influenced when mAbs of different N KG2D ligands were added ; the cytotoxicity of N K cells against U251 cell was dramatically upgraded , that against K562 cell was not influenced when mAb of HLA2 Ⅰ molecules was added. Conclusion Aberrant expression of N KG2D ligand and high ex2 pression HLA2 Ⅰ molecules may cont ribute to immune escape f rom N K cell2mediated immune surveillance of malignant gliomas.

Key words： Gliomas Natural killer cell NK cell receptor Cytotoxicity HLA-Ⅰ molecules

收稿日期: 2007-04-23;

通讯作者: 郭坤元

服务
把本文推荐给朋友
加入我的书架
加入引用管理器
E-mail Alert
RSS
作者相关文章
周健
梅家转
郭坤元
牛新清
王杨
涂三芳
周雪云

引用本文:

周健,梅家转,郭坤元等. 人胶质瘤细胞U251逃逸NK细胞免疫杀伤机制的初步探讨 [J]. 肿瘤防治研究, 2008, 35(04): 247-250.

ZHOU Jian,MEI Jia-zhuan,GUO Kun-yuan et al. Aberrant Expression of NKG2D Ligand and High Expression HLA-Ⅰ Molecules May Contribute to Immune Escape from Natural Killer Cell-mediated Immune Surveillance of Malignant Gliomas[J]. CHINA RESEARCH ON PREVENTION AND TREATMENT, 2008, 35(04): 247-250.

没有本文参考文献

[1] 王天路;孙涛;陶轶. 探讨bcl-2下调后对胶质瘤细胞系的增殖、凋亡和侵袭能力的影响 [J]. 肿瘤防治研究, 2009, 36(2): 95-99.

[2] 梅家转;刘桂举;冯睿婷;郭坤元 . 顺铂对鼻咽癌细胞NKG2D配体表达和NK细胞杀伤活性的增强作用[J]. 肿瘤防治研究, 2009, 36(12): 996-998.

[3] 黄宇贤;王 杨;胡亮杉;宋朝阳;郭坤元. 硼替佐米诱导ABCG2 High耐药鼻咽癌细胞高 表达N KG2D 配体的实验研究[J]. 肿瘤防治研究, 2008, 35(11): 761-765.

[4] 郑红刚;朴炳奎;林洪生;熊 露;花宝金;祁 鑫;周雍明. 晚期非小细胞肺癌患者外周血DC亚型与 NK细胞的关系[J]. 肿瘤防治研究, 2008, 35(1): 18-22.

[5] 梅家转;郭坤元;吴远彬;周 健;魏红梅. **NK**细胞对人鼻咽癌细胞**CNE2**裸鼠皮下移植瘤的抑制作用[J]. 肿瘤防治研究, 2007, 34(6): 425-427.

[6] 梅家转;郭坤元;魏红梅;常 红;宋朝阳. **NKG2D**介导**NK** 细胞对鼻咽癌细胞杀伤作用的体外研究[J]. 肿瘤防治研究, 2007, 34(4): 233-236.

[7] 黄宽明;冯艳琴;涂汉军;李新建;袁先厚;王伦长;. 冷冻联合rhTNF-α对C6大鼠脑胶质瘤细胞的凋亡诱导和增殖抑制作用 [J]. 肿瘤防治研究, 2006, 33(5): 299-301, .

[8] 黄乔春;陈谦学;郑虎;叶应湖;阮航;邵步云;. 脑胶质瘤bFGF蛋白表达与增殖活性的研究 [J]. 肿瘤防治研究, 2003, 30(6): 464-465, .

[9] 刘朝阳;王泽光;田海梅;娜迪娅;王宇部;曹冬艳;刘毅;李茉;梁军林;张伟;. BRM释介素抗肿瘤作用研究 [J]. 肿瘤防治研究, 2003, 30(3): 206-209.

[10] 李玲莉;李涛;李承晏;. tk基因治疗脑胶质瘤时的免疫反应与旁观者效应的关系 [J]. 肿瘤防治研究, 2002, 29(4): 280-282.

[11] 宫立众;张茂宏;徐从高. **CTX**、**G-CSF** 动员造血干细胞过程中**NK** 细胞检测[J]. 肿瘤防治研究, 2001, 28(5): 369-371.