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基础研究

NKG2D介导NK 细胞对鼻咽癌细胞杀伤作用的体外研究

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NKG2D Mediated Cytotoxicities of NK Cells Against Human Nasopharyngeal Carcinoma Cell Line (CNE2) in Vitro

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摘要 目的 探讨鼻咽癌CNE2细胞表面HLA-Ⅰ类分子表型和NKG2D配体的表达情况，进一步了解其对同种异体NK细胞杀伤活性的影响。方法 流式细胞仪检测NKG2D的配体MICA、MICB、ULBP1、ULBP2、ULBP3在K562、CNE2细胞的表达情况。PCR-SSP法分析CNE2细胞HLA-A、B、Cw分型和NK细胞KIR分型。LDH释放法测定5例健康者NK细胞在不同效靶比时对K562、CNE2细胞的杀伤活性，效靶比20：1时观察抗NKG2D配体的单抗对NK细胞杀伤K562、CNE2细胞活性的影响。结果 CNE2细胞表达MICA、MICB、ULBP2，不表达ULBP1、ULBP3。K562细胞表面表达MICA、MICB、ULBP1、ULBP2、ULBP3。5例健康者NK细胞抑制性KIR与CNE2细胞表面的HLA-Ⅰ类分子之间存在错配。效靶比5：1、10：1、20：1、30：1时NK细胞对K562、CNE2细胞的杀伤活性分别为（29．02±0．45）%、（10．50±2．17）%；（44．43±1．36）%、（27．68±1．47）%；（57．82±1．35）%、（36．99±3．13）%；（71．24±2．36）%、（55．00±2．20）%，在各效靶比时NK细胞对K562细胞的杀伤活性较CNE2细胞明显增强（P=0．000）；在效靶比20：1时anti-MICA、anti-MICB、anti-ULBP1、anti—ULBP2、anti-ULBP3可明显抑制NK细胞对K562细胞的杀伤活性，与阻断前相比有显著性差异（P=0．000）；anti—MICA、anti—MICB、anti—ULBP2可明显抑制NK细胞对CNE2细胞的杀伤活性，与阻断前相比有显著性差异（P〈0．01），但anti—ULBP1、anti—ULBP3不能阻断NK细胞对CNE2细胞的杀伤活性。结论 NKG2D配体影响NK细胞对靶细胞的杀伤活性，提高NKG2D配体的表达有可能提高NK细胞的抗肿瘤活性。

关键词： 自然杀伤细胞 NKG2D 杀伤细胞免疫球蛋白样受体

Abstract: Objective To analyze HLA-class I molecules and the expression of NKG2D ligands in human nasopharyngeal carcinoma cell line (CNE2) and their effects on cytotoxicity of natural killer (NK) cells. Methods The expression of NKG2D ligands on the surface of CNE2 and K562 cells were analyzed by flow cytometry. The HLA2 class I molecules in CNE2 cells and killer cell immunoglobulin-like receptors (KIR) expressed by NK cells (isolated from 5 healthy persons) were analyzed by PCR-SSP. Cytotoxicities of NK cells against CNE2 and K562 cells were detected by LDH releasing assay at different effect-to-target cell ratios (E : T) . In blocking experiments , different anti-NKG2D ligands monoclonal antibodies (mAbs) were added to the target cells at 20 : 1 E : Tratio. Results It was found that MICA , MICB ,ULBP2 were expressed by CNE2 , ULBP1 , ULBP3 were not detectable on CNE2 ; K562 expressed all the NKG2D ligands. There were mismatches between inhibitory KIRs expressed by NK cells and HLA-class I molecules expressed by the CNE2 cells. NK cells displayed highly in vit ro cytotoxicity against K562 and CNE2 cells with anlysis of (29. 02 ±0. 45) % , (10. 50 ±2. 17) %; (44. 43 ±1. 36) % , (27. 68 ±1. 47) %; (57. 82 ±1. 35) % , (36. 99 ±3. 13) %; (71. 24 ±2. 36) % , (55. 00 ±2. 20) % respectively at 5 : 1 ,10 : 1 , 20 : 1 , 30 : 1 E : T ratios (P = 0. 000) . Blocking experiment s confirmed that killing of K562 by NK cells was efficiently inhibited by anti-MICA mAb , anti-MICB mAb , anti-ULBP1 mAb , anti-ULBP-mAb and anti-ULBP-mAb. anti-MICA mAb. Anti-MICBmAb , anti-ULBP2 mAb could partially inhibit the cytotoxicity of NK cells against CNE2 cells , whereas anti-ULBP1 mAb and anti-ULBP3 mAb could not inhibit the cytotoxicity of NK cells. Conclusion Expression of NKG2D ligands is correlated with the cytotoxicity of NK cells. NK2 mediated cytolytic activity may be boosted by engineering cells expressing high levels of activating NKG2D ligands.

Key words: Natural killer cell NKG2D Killer cell immunoglobulin-like receptor

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没有本文参考文献

[1] 梅家转;刘桂举;李瑞君;栗敏;张晓娟 . IL-15上调NKG2D表达对CIK细胞杀伤活性的增强效应 [J]. 肿瘤防治研究, 2011, 38(5): 495-497.

[2] 王国征;孙明;贾振薇;周健;胡亮杉;郭坤元;宋朝阳. 苦参碱提高白血病KG1a细胞对NK细胞杀伤敏感性及其机制[J]. 肿瘤防治研究, 2009, 36(4): 298-301.

[3] 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.

[4] 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

[5] 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.

[6] 周健;梅家转;郭坤元;牛新清;王杨;涂三芳;周雪云;. 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.

[7] 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.

[8] 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.