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人外周血γδT细胞CD107a的表达变化与细胞毒活性的关系 点此下载全文

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摘要：

目的：探讨人外周血γδT细胞体外诱导过程中CD107a的表达变化及其与γδT细胞细胞毒活性的关系。方法：分离健康人外周血单个核细胞(peripheral blood mo nonuclear cells, PBMCs)，加入含有IL-2和异戊烯焦磷酸（isopentenyl pyrophosphate，IPP）的培养基，体外诱导γδT细胞。分别在第7、10、14天以流式细胞仪对培养的γδT细胞进行鉴定，并同时检测其CD107a、穿孔素和颗粒酶B的表达。CCK-8试剂盒检测γδT细胞对胰腺癌细胞SW-1990的杀伤效应。采用SPSS13.0软件进行spearman相关分析。结果：在培养的第7、10、14天，γδTCR阳性细胞分别为(60.31±3.84)%、(66.45±4.25)%、(70.99± 4.66)%。CD107a、穿孔素和颗粒酶B的表达在γδT细胞培养第7~10天达到峰值后呈下降趋势，第7天与第0天相比差异有统计学意义\[(80.66±4.42)%、(70.11±3 34)%、(94.26±4.25)% vs (69.02±5.04)%、(62.31±4.66)%、(53.62±3.69)%， P <0.05\]。培养第7天、第10天的γδT细胞对SW-1990细胞杀伤率显著高于第14天的γδT细胞\[(58.86± 5 12)%、(61.53±4.69)% vs (40.31±4.83)%， P <0.05\]。γδT细胞CD107a表达与穿孔素、颗粒酶B、其对SW-1990细胞杀伤效应显著相关（ r =0.853， r =0.785， r =0.839，均 P <0 01）。结论：人外周血γδT细胞CD107a的表达与其抗肿瘤能力正相关，可能是γδT细胞细胞毒活性的一个标志。

关键词：γδT细胞 CD107a 胰腺肿瘤 细胞毒作用 穿孔素 颗粒酶B

Relationship of CD107a expression with cytotoxic activity of human peripheral γδT cells Download Fulltext

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Abstract:

Objective:To investigate changes of CD107a expression in γδT cells during cultivation and the relationship of CD107a expression with cytotoxicity of γδT cells. Methods: γδT cells were generated in vitro by stimulating PBMCs with IL-2 and isopentenyl pyrophosphate (IPP). Phenotype analysis of γδT cells was performed on the 7, 10 and 14 day by flow cytometry. Meanwhile, CD107a, perforin and granzyme B expressions were detected in γδT cells by flow cytometry. The cytotoxicity of γδT cells on pancreatic carcinoma SW-1990 cells was determined by CCK-8 kit. Spearman correlation analysis was performed by SPSS13.0 software. Results: γδTCR expression in γδT cells was (60.31±3.84)%, (66.45±4.25)% and (70.99±4.66)% on 7, 10 and 14 day, respectively. The expression of CD107a, perforin and granzyme B reached the peak on 7~10 d (7 d vs 0 d: \[80.66±4.42\]%, \[70.11±3.34\]%, \[94.26±4.25\]% vs \[69.02±5.04\]%, \[62.31±4.66\]%, \[53.62±3.69\]%, P <0.05), and then gradually decreased. The cytotoxicity rates of 7 day and 10 day γδT cells against SW-1990 cells were significantly higher than those of 14 day γδT cells (\[58 86±5.12\]%, \[61.53±4.69\]% vs \[40.31±4.83\]%, P <0.05). CD107a expression in γδT cells was significantly correlated with perforin, granzyme B expressions and cytotoxicity on SW-1990 cells (P <0.01). Conclusion: The expression of CD107a on human peripheral γδT cells is positively correlated with its anti-tumor effect and may serve as a marker for the cytotoxic activity of γδT cells.

Keywords:γδT cell CD107a pancreatic carcinoma cytotoxicity perforin granzyme B

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