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体外扩增肾癌患者自体NK细胞及其对人肾细胞癌786-O细胞的杀伤 [点此下载全文](#)

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摘要:

目的: 探究IL-15、4-1BBL基因修饰的人白血病K562细胞(modi-K562细胞)联合IL-2体外高效扩增肾细胞癌患者自体自然杀伤(natural killer, NK)细胞的方法, 研究扩增前后NK细胞对肾癌细胞株786-O的杀伤作用。方法: 10例肾癌患者的外周血单个核细胞(peripheral blood mononuclear cell, PBMC)与modi-K562细胞在含不同浓度IL-2培养液中共育14 d, 采用流式细胞术、Calcein-AM释放实验检测NK细胞的扩增情况、免疫表型及对肾癌786-O细胞的杀伤作用。结果: modi-K562细胞联合IL-2可有效扩增NK细胞, 300 U/ml IL-2培养14 d时, NK细胞扩增(202.4±12.8)倍。在效靶比为20:1时, 扩增后NK细胞对786-O细胞的杀伤率为(72.0±4.3)%, 显著高于扩增前NK细胞的杀伤率(34.2±3.6)% (P<0.01)。结论: IL-15、4-1BBL基因修饰的K562细胞联合IL-2在体外能有效扩增肾细胞癌患者NK细胞, 扩增后NK细胞对肾癌786-O细胞的杀伤作用显著增强。

关键词: [肾细胞癌](#) [自然杀伤细胞](#) [基因修饰的K562细胞](#) [IL-2](#) [自体](#) [扩增](#)

In vitro expansion of autologous NK cells from renal cell carcinoma patients and its cytotoxicity against human renal cell carcinoma 786-O cells [Download Fulltext](#)

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Abstract:

Objective: To explore the expansion method of autologous NK cells from renal cell carcinoma (RCC) patients based on IL-15- and 4-1BBL-modified K562 cells (modi-K562 cells) combined with IL-2 and to investigate their cytotoxicity against RCC 786-O cell lines. Methods: Peripheral blood mononuclear cells (PBMCs) from 10 RCC patients were co-cultured with modi-K562 cells in medium containing various concentrations of IL-2 for 14 d. The expansion, immune phenotype and cytotoxicity against 786-O cells were analyzed by flow cytometry and Calcein-AM release assay. Results: modi-K562 combined with IL-2 effectively amplified NK cells in vitro. The number of NK cells from 300 IU/mL IL-2 co-culture system for 14 d had amplified on an average of (202.4±12.8) fold. Moreover, the expanded NK cells significantly increased cytotoxicity against 786-O cells. At an effect/target (E:T) ratio of 20:1, (72.0±4.3)% of the targets were killed by the expanded NK cells, whereas unexpanded ones killed only (34.2±3.6)% of targets (P<0.01). Conclusion: modi-K562 cells combined with IL-2 can effectively stimulate the expansion of RCC patients' NK cells in vitro, which significantly augment the cytotoxicity against RCC 786-O cells.

Keywords: [renal cell carcinoma](#) [natural killer cell](#) [gene-modified K562 cell](#) [IL-2](#) [autologous](#) [expansion](#)

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