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摘要:

目的: 通过慢病毒介导获得表达针对血管内皮细胞生长因子受体1(vascular endothelial growth factor receptor 1, VEGFR1/FLT1)的嵌合抗原受体(chimeric antigen receptor, CAR)的Jurkat细胞, 探讨其对VEGF的趋向性。方法: 合成针对VEGFR1的CAR(FLT1-CAR), 构建重组慢病毒载体LV-gn-FLT1-CAR, 并感染Jurkat细胞; 经G418筛选得到稳定转染细胞株; PCR及流式细胞术检测细胞株中FLT1-CAR mRNA及蛋白的表达, Transwell法检测细胞株对VEGF的趋化效果。结果: 重组慢病毒LV-gn-FLT1-CAR成功构建; FLT1-CAR成功整合到Jurkat细胞中并稳定表达FLT1-CAR蛋白。筛选的细胞株Jurkat-gn-FLT1-CAR-1、Jurkat-gn-FLT1-CAR-2对VEGF有显著趋化效果, 100 ng/ml VEGF处理后, Jurkat-gn-FLT1-CAR-1细胞趋化数为(62±8)个, 显著高于对照组Jurkat趋化细胞数的(18±5)个(P<0.01)。结论: 成功筛选到稳定表达FLT1-CAR的Jurkat细胞克隆, 其对VEGF有明显的趋化作用

关键词: [血管内皮细胞生长因子](#) [CXC趋化因子受体3](#) [嵌合抗原受体](#) [Jurkat细胞](#) [趋化作用](#)

Screening of Jurkat cells expressing FLT1-CAR and their chemotaxis to VEGF [Download Fulltext](#)

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Abstract:

Objective: To construct Jurkat cells expressing chimeric antigen receptor (CAR) of vascular endothelial growth factor receptor 1 (VEGFR1/FLT1) using lentivirus and to investigate their chemotaxis to VEGF. Methods: The CAR targeting VEGFR1 was synthesized, and the recombinant lentiviral vector named LV-gn-FLT1-CAR was constructed and infected into Jurkat cells. Stable infected cell strains were obtained through G418 screening. The expressions of FLT1-CAR mRNA and protein in the stable infected cell strains were detected by PCR and flow cytometry. The chemotaxis of selected cell strains toward VEGF was detected by Transwell assay. Results: Recombinant lentivirus LV-gn-FLT1-CAR was successfully constructed. FLT1-CAR was successfully integrated into Jurkat cells and FLT1-CAR protein was stably expressed. The selected cell strains, Jurkat-gn-FLT1-CAR-1 and Jurkat-gn-FLT1-CAR-2, showed obvious chemotaxis to VEGF. In a VEGF concentration of 100 ng/ml, Jurkat-gn-FLT1-CAR-1 cell chemotactic number was (62±8), which was significantly higher than that of the control group Jurkat cells (18±5) (P<0.01). Conclusion: Jurkat cell strains stably express FLT1-CAR are successfully obtained, which have a distinct chemotaxis to VEGF.

Keywords: [vascular endothelial growth factor](#) [chemokine \(C-X-C motif\) receptor 3 \(CXCR3\)](#) [chimeric antigen receptor](#) [Jurkat cell](#) [chemotaxis](#)

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