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CD80-链亲和素融合蛋白锚定的鼻咽癌CNE2细胞增强T细胞的杀伤活性

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摘要：

目的：制备CD80-链亲和素（streptavidin，SA）融合蛋白，研究CD80-SA锚定的鼻咽癌CNE2细胞对T细胞杀伤活性的影响。方法：pET21a-CD80-SA-6His质粒转化大肠杆菌BL21（DE3），IPTG诱导CD80-SA融合蛋白的表达，经Ni-NTA亲和层析纯化后透析复性。流式细胞仪检测CD80-SA融合蛋白在CNE2细胞表面的锚定效率；LDH释放法检测CD80-SA锚定的CNE2细胞对T细胞杀伤活性的影响。结果：成功制备和纯化了CD80-SA融合蛋白。CNE2细胞表面低表达CD80分子\[（2.2±0.18）%\]。CD80-SA融合蛋白可有效地锚定于生物素化的CEN2细胞表面，锚定效率可达73%。CD80-SA锚定的CNE2细胞可有效激活T细胞的杀伤作用，效靶比在1∶1、1∶20、1∶40时T细胞的杀伤率分别约为(37±3.12)%、(51±2 63)%和(58±2.47)%，均显著高于对照CNE2细胞激活的T细胞（均P<0.01）。结论：CD80-SA融合蛋白可有效锚定于生物素化的CNE2细胞表面，从而增强T细胞对CNE2细胞的杀伤活性。

关键词：CD80 链亲和素 生物素 融合蛋白 鼻咽癌细胞 T细胞 杀伤

CD80-streptavidin-decorated CNE2 cells enhance cytotoxicity of T cells

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Abstract:

Objective:To prepare CD80-streptavidin (CD80-SA) fusion protein and immobilize it on the surface of nasopharyngeal carcinoma CNE2 cells (CD80-SA-CNE2 cells), so as to investigate the effect of CD80-SA-CNE2 cells on cytotoxicity of T cells. Methods: pET21a-CD80-SA-6His expression plasmid was transformed into E. coli BL21 (DE3). The CD80-SA fusion protein was induced by IPTG, purified by Ni-NTA affinity chromatography and refolded by dialysis. The immobilization rate of CD80-SA on CNE2 cell surface was analyzed by flow cytometry, and the effect of CD80-SA-CNE2 cells on cytotoxicity of T cells was detected by LDH assay. Results: CD80-SA fusion protein was successfully prepared and purified. CD80 was lowly expressed on CNE2 cells (\[2.233±0.176\]%). CD80-SA fusion protein was effectively immobilized on the surface of biotinylated-CNE2 cells, with the immobilization rate being 73%. Moreover, CD80-SA-CNE2 cells effectively induced cytotoxicity of T cells; the cytotoxic rates of T cells were (37±3.12)%, (51±2 63)% and (58±2.47)% at the E∶T ratios of 1∶1, 1∶20 and 1∶40, respectively, which were significantly higher than those of control CNE2 cells (all P<0.01). Conclusion: CD80-SA fusion protein can be effectively immobilized on the surface of biotinylated-CNE2 cells, enhancing the cyctotoxicty of T cells against CNE2 cells.

Keywords:CD80 streptavidin biotin fusion protein nasopharyngeal carcinoma cell T cell cytotoxicty

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