

首页 期刊概况 编委会 期刊内容 特

30~35.人黑素瘤单链抗体-量子点纳米探针的制备及其与黑素瘤细胞特异性结合[J].张小敏,张堂德,鲍晨晨,宋 华,李 娜,刘 林物治疗杂志,2010,17(1)

人黑素瘤单链抗体-量子点纳米探针的制备及其与黑素瘤细胞特异性结合 点此下载全文

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摘要:

目的:制备抗人黑素瘤细胞单链抗体与碲化镉量子点(CdTe guantun dot, CdTe)连接的纳米探针,观察其对恶性黑素素瘤神经节苷脂单链抗体(anti human melanoma ganglioside single chain variable fragment antibody,GD/S中,然后在BL21(DE3)细菌中进行诱导表达,采用变性法纯化表达的蛋白,再用改良的透析法复性目的蛋白,SDS PAGE的GD/ScFvMEL抗体与量子点连接制备成纳米探针GD/ScFvMEL QDs,然后与黑素瘤A375细胞株及胃癌MGC 803细胞株性。结果:PCR、双酶切和序列测定证实重组子的拼接完全正确,SDS PADE结果显示,GD/ScFvMEL抗体的表达量达40%子点制备GD/ScFvMEL QDs纳米探针,经扫描电镜、X衍射分析、荧光光谱和SDS PAGE分析证实纳米探针的成功制备。GI 375黑素瘤细胞,不与胃癌细胞MGC 803细胞结合。结论:成功制备抗人黑素瘤神经节苷脂单链抗体量子点纳米探针,该

关键词: 黑素瘤 神经节苷脂 单链抗体 量子点 纳米探针

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Abstract:

Objective: To prepare a nanoprobe, anti human melanoma ganglioside single chain variable fragment with CdTe quantum dot, and to observe its ability to specifically bind human malignant melanoma cells. It was cloned into pET32a (+), and the plasmid was then transformed into E. coli BL21 (DE3) for GD/Sc The expressed GD/ScFvMEL antibody was purified by denaturing method and further refolded by modified GD/ScFvMEL antibody was analyzed by SDS PAGE. The GD/ScFvMEL QDs nanoprobe was prepared by cor CdTe quantum dot, and its specificity was observed by incubating with MGC 803 cells and melanoma A37 pET32a GD/ScFvMEL was constructed and confirmed by PCR, restriction endonuclease analysis and DNA expressed GD/ScFvMEL antibody in total bacteria proteins was about 40% as detected by SDS PAGE. The antibody was effectively conjugated with CdTe quantum dot, and the resulting GD/ScFvMEL QDs nanoprobe could specifically bind melanoma A375 cells, but could not bind stomach can have successfully prepared an anti human melanoma ganglioside single chain antibody CdTe quantum do bind melanoma cells.

Keywords: melanoma gaglioside single chain antibody quantum dot nanoprobe