

论著

4-1BBL修饰小鼠结肠癌疫苗体外诱导抗肿瘤免疫反应的研究

李巧霞 单保恩 艾军 李宏 付小梅

河北医科大学第四医院科研中心, 石家庄050011

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摘要 背景与目的: 研究4-1BBL(4-1BB Ligand, 即CD137配体)转基因小鼠结肠癌细胞瘤苗体外诱导细胞毒性T淋巴细胞(Cytotoxic T lymphocytes, CTL)特异性杀伤活性及刺激淋巴细胞产生细胞因子的作用。材料与方法: 采用脂质体介导法将真核表达质粒pMKITneo/4-1BBL导入小鼠结肠癌colon26细胞, 经G418筛选后获得4-1BBL高表达克隆, 用丝裂霉素C(MMC)处理后, 制成肿瘤细胞瘤苗, 与经体外诱导的同系小鼠CTL共同培养, 测定对CTL特异性杀伤活性及对脾细胞产生细胞因子(IL-2、IL-4和IFN-γ)的影响。结果: 转染4-1BBL的colon26细胞高表达4-1BBL蛋白, 将该细胞经MMC处理后制成的瘤苗, 与野生型colon26细胞相比, 对CTL特异性杀伤亲本肿瘤细胞的作用明显增强(P<0.01), 但CTL对非亲本肿瘤细胞的杀伤作用无明显影响(P>0.05); 该瘤苗在体外能显著增强脾细胞分泌细胞因子(IL-2、IL-4和IFN-γ)的能力(P<0.01)。结论: 4-1BBL转基因小鼠结肠癌细胞瘤苗能有效诱导抗结肠癌免疫反应。

关键词 [4-1BB配体](#); [细胞毒性T细胞](#); [细胞因子](#) [肿瘤疫苗](#)

In Vitro Anti-tumor Immune Effects Induced by 4-1BBL-transfected Mouse Colon Cancer Cells

LI Qiao-xia, SHAN Bao-en, AI Jun, LI Hong, FU Xiao-mei

Research Center of the Fourth Hospital of Hebei Medical University, Shijiazhang 050011, China

Abstract **BACKGROUND & AIM:** To study the cytotoxic activity of CTL and cytokines production of lymphocytes induced by 4-1BBL-transfected colon26 in vitro. **MATERIALS AND METHODS:** The eukaryotic expression vector pMKITneo/4-1BBL was transfected into colon26 by lipofectamine2000, then the cells with high expression of 4-1BBL were selected by G418. The tumor cell vaccines (TCV) were obtained by treatment with mitomycin(MMC).The TCV were co-cultivated with syngeneic murine cytotoxic T lymphocytes (CTL).Then the cytotoxic activity of CTL and the cytokines production of spleen cells were tested. **RESULTS:** The colon26 cells transfected with 4-1BBL showed strong expression of 4-1BBL protein on cell surface. Compared with TCV-colon26,the TCV-colon26/4-1BBL cells could induce a more efficient cytotoxic activity of CTL against its parental tumor cell colon26(P<0.01),but not against non-parental tumor cell S180.The TCV-colon26/4-1BBL could significantly enhance the ability of murine spleen cells to produce cytokines(P<0.01). **CONCLUSION:** The murine colon26 tumor cells transfected with 4-1BBL could induce an efficient anti-tumor immune response.

Keywords [4-1BB ligand](#) [cytotoxic T lymphocyte](#) [cytokine](#) [tumor vaccines](#)

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通讯作者 单保恩

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