中国病理生理杂志 2005 21 (1): 167-171 ISSN: 1000-4718 CN: 44-1187/R

论著

pcDNA3.1+/MAGE-3 DNA疫苗诱导特异性抗肿瘤免疫应答的实验研究

刘杏娥[1],孙晓东[2],吴金民[3]

1浙江医院肿瘤科，浙江大学医学院附属邵逸夫医院2普外科，3肿瘤中心， 浙江 杭州 310016

收稿日期 2003-6-30 修回日期 2003-10-15 网络版发布日期 2009-9-13 接受日期 2003-10-15

摘要 目的：构建pcDNA3.1+/MAGE-3 DNA疫苗，观察其在小鼠体内诱导特异性抗肿瘤免疫应答的能力。方法： 通过RT-PCR构建重组表达质粒pcDNA3.1+/MAGE-3；以pcDNA3.1+/MAGE-3 DNA疫苗免疫已接种肿瘤细胞的小鼠，每10 d重复免疫1次，共3次，以pcDNA3.1+、PBS为对照。末次免疫后5 d检测血清中MAGE-3抗体滴度、小鼠脾淋巴细胞的细胞毒T细胞（cytotoxic T lymphocytes，CTL）杀伤活性、细胞因子IL-2和IFN-γ的浓度，同时计算抑瘤率。结果： 成功构建了pcDNA3.1+/MAGE-3 DNA疫苗，用此疫苗免疫已接种B16/MAGE-3细胞的小鼠后，能诱导小鼠脾淋巴细胞MAGE-3特异性的杀伤活性，脾细胞培养上清中细胞因子IL-2和IFN-γ的浓度明显增高，血清中抗MAGE-3抗体在1∶20滴度时阳性，肿瘤生长被显著抑制，与pcDNA3.1+组、PBS组相比，差异显著（P＜0.01）。结论： 成功构建了pcDNA3.1+/MAGE-3 DNA疫苗，该疫苗在小鼠体内既能激活CTL杀伤活性和CD4+ T细胞活性，又能激活体液免疫反应，从而诱导出特异性的抗肿瘤免疫应答。

关键词 黑色素瘤； 疫苗,DNA； 免疫应答； T淋巴细胞,细胞毒性

分类号 R363

Specific antitumor immune response induced by pcDNA3.1+/MAGE-3 DNA vaccine in mice

LIU Xing-e[1], SUN Xiao-dong[2], WU Jin-min[3]

1Center of Oncology,Zhejiang Hospital,2Department of General Surgery,3Center of Oncology,
Sir Run Run Shaw Hospital, Zhejiang University, Hangzhou 310016, China

Abstract

<FONT face=Verdana>AIM: To construct pcDNA3.1+/MAGE-3 DNA vaccine and investigate the antigen-specific antitumor immune responses induced by pcDNA3.1+/MAGE-3 DNA vaccine in vivo. METHODS: C57BL/6 mice challenged with B16/MAGE-3 cells were immunized by intramuscular injection of pcDNA3.1+/MAGE-3 DNA vaccine every 10 days. pcDNA3.1+ plasmid and PBS were used as controls. After three cycles of immunization, murine splenic lymphocytes, serum, and tumor were obtained for cytotoxity assay, detections of cytokines (IL-2 and IFN-γ), measurement of MAGE-3 antibody, and tumor inhibitory rates, respectively. RESULTS: The pcDNA3.1+/MAGE-3 DNA vaccine immunized murine lymphocytes induced specific cytotoxicity against B16/MAGE-3 cells. Significantly increased secretions of IL-2 and IFN-γ were detected. The titres of antibody against MAGE-3 were 1∶1 and 1∶20, while controls were negative. The tumor inhibitory rate in pcDNA3.1+/MAGE-3 group was significantly different from that in controls. CONCLUSION: The pcDNA3.1+/MAGE-3 DNA vaccine was constructed successfully. pcDNA3.1+/MAGE-3 DNA vaccine activates both cellular and humoral immune responses, and induces antigen-specific antitumor immune responses in vivo.</FONT>

Key words Melanoma Vaccines DNA Immune response T-lymphocytes cytotoxic

DOI: 1000-4718

通讯作者 刘杏娥