

论文

单克隆抗体与丝裂霉素交联物对人胃癌细胞的选择性杀伤作用

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摘要:

本文选用抗胃癌单克隆抗体(MoAb)3H 11与Mitomycin C(MMC)制备交联物。体外实验结果表明,3H 11-MMC对人胃癌细胞BGC 823有明显的杀伤作用。而且有明显的选择性:3H 11-MMC(相当于MMC 100 ng/ml)对靶细胞的杀伤率为71%,而对非靶细胞MCF-7仅为14%。MoAb 3H11与靶细胞预温后可使杀伤率(1 μg/ml)由85%下降为38%,而与MoAb 3G9预温却无明显影响。体内实验表明。3 H 11-MMC处理组,肿瘤形成的时间较各对照组明显延长,肿瘤生长速度明显减慢,具有显著性差异。

关键词: 单克隆抗体 丝裂霉素 胃癌 细胞毒

THE SELECTIVE CYTOTOXICITY OF MONOCLONAL ANTI BODY CONJUGATED WITH MITOMYCIN C ON HUMAN GASTRIC CANCER CELLS

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Abstract:

The murine monoclonal antibody (MoAb)3H11 against human gastric cancer was purified with affinity column and conjugated with Mitomycin C (MMC).The binding activity of MoAb in the conjugate retained more than 90% of the original MoAb 3H11 when the molar ratios of MMC to 3H11 was 7~8:1. The killing rate of 3H11-MMC conjugate on human gastric cancer cells BGC 823 was increased significantly than that of free MMC in vitro. The selective cytotoxicity was verified with the following results. (1) the cytotoxicity of the conjugate was much higher than that of normal mouse IgG (nMuIgG) conjugated with MMC; (2) when breast cancer cells MCF-7 was used as target cells instead of BGC 823 cells, much lower cytotoxicity of the conjugate was observed; (3) the cytotoxicity of the conjugate on BGC823 cells could be blocked when the target cells was preincubated with MoAb 3H11, but not with MoAb 3G9 which did combine with BGC823 cells at binding sites different from MoAb 3H11.Nude mice were inoculated with BGC823 cells as a model of gastric cancer and treated with conjugate 3H11-MMC, nMuIgG-MMC, MMC or PBS (ip). It was shown that thetime of tumor formation and the rate of tumor growth in 3H11-MMC conjugate treated animals were significantly different from that in control groups. The rate of inhibition of tumor weights was 60.4% for the conjugate 3H11-MMC treated group which was significantly higher than for other groups.

Keywords: Mitomycin C Gastric cancer Cytotoxicity Monoclonal antibody

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