

论文

抗IV型胶原酶单抗3G11与力达霉素偶联物的抗肿瘤作用

王风强;尚伯杨;甄永苏;

中国医学科学院、中国协和医科大学 医药生物技术研究所, 北京 100050

摘要:

目的观察抗IV型胶原酶单抗3G11与力达霉素(LDM)偶联物的抗肿瘤作用。方法用MTT法测定其对肿瘤细胞的增殖抑制作用;用小鼠移植性肝癌H22观察体内抗肿瘤作用。结果3G11-LDM偶联物保留了单抗3G11与IV型胶原酶和靶细胞H22细胞的结合能力,体外试验H22细胞显示比游离LDM更强的细胞增殖抑制作用。体内3G11-LDM偶联物0.05和0.10 mg·kg<sup>-1</sup>对小鼠移植性肝癌H22的抑瘤率分别为87.8%和97.2%,而游离LDM 0.05 mg·kg<sup>-1</sup>的抑瘤率为67.1%,且3G11-LDM偶联物组小鼠的中位生存时间比LDM组明显延长。结论3G11-LDM偶联物对小鼠移植性肝癌H22的抑瘤作用比LDM强,可能成为抗肿瘤靶向药物。

关键词: IV型胶原酶 单克隆抗体 力达霉素 免疫偶联物

Antitumor effects of the immunoconjugate composed of lidamycin and monoclonal antibody 3G11

WANG Feng-qiang; SHANG Bo-yang; ZHEN Yong-su

Abstract:

AimTo study the antitumor effects of an immunoconjugate composed of lidamycin (LDM) and monoclonal antibody 3G11 (3G11-LDM conjugate). Methods3G11-LDM conjugate was prepared by using 2-iminothiolane (2-IT) and *m*-maleimidobenzoyl-*n*-hydroxy-succinimide ester (MBS) as crosslinkers. The molecular weight of the conjugate was measured on non-reduced SDS-PAGE gel. Immunoreactivity of 3G11-LDM conjugate to type IV collagenase or to hepatoma 22 cells was determined by ELISA. The cytotoxicity of the immunoconjugate to hepatoma 22 cells was examined by MTT assay. Antitumor effects of the 3G11-LDM conjugate in vivo were evaluated using subcutaneously transplanted hepatoma 22 tumor model in mice. ResultsThe molecular weight of 3G11-LDM conjugate was approximately 160 kDa. 3G11-LDM conjugate retained part of the immunoreactivity of 3G11 to type IV collagenase and hepatoma 22 cells. As compared with free LDM, 3G11-LDM conjugate showed stronger cytotoxicity to hepatoma 22 cells. When administered intravenously (iv×2 on day 1 and 8), 3G11-LDM conjugate, at doses of 0.05 and 0.10 mg·kg<sup>-1</sup>, inhibited the growth of hepatoma 22 in mice by 87.8% and 97.2% on day 11, respectively, whereas the unconjugated LDM at 0.05 mg·kg<sup>-1</sup> inhibited tumor growth by 67.1%. The median survival times for tumor-bearing mice of untreated control, LDM at 0.05 mg·kg<sup>-1</sup>, 3G11-LDM at 0.05 mg·kg<sup>-1</sup>, and 3G11-LDM at 0.10 mg·kg<sup>-1</sup> were 34, 41.5, 60.5 and 94 d, respectively. Evidently 3G11-LDM was more effective than free LDM in suppressing tumor growth and prolonging the life span of tumor-bearing mice. Conclusion3G11-LDM conjugate shows much stronger antitumor effects than equivalent dose of free LDM and may have promising therapeutic potential in cancer treatment.

Keywords: monoclonal antibody lidamycin immunoconjugate type IV collagenase

收稿日期 2002-09-03 修回日期 网络版发布日期

DOI:

基金项目:

通讯作者: 甄永苏

作者简介:

参考文献:

本刊中的类似文章

扩展功能

本文信息

- ▶ Supporting info
- ▶ PDF(223KB)
- ▶ [HTML全文]
- ▶ 参考文献

服务与反馈

- ▶ 把本文推荐给朋友
- ▶ 加入我的书架
- ▶ 加入引用管理器
- ▶ 引用本文
- ▶ Email Alert
- ▶ 文章反馈
- ▶ 浏览反馈信息

本文关键词相关文章

- ▶ IV型胶原酶
- ▶ 单克隆抗体
- ▶ 力达霉素
- ▶ 免疫偶联物

本文作者相关文章

- ▶ 王风强
- ▶ 尚伯杨
- ▶ 甄永苏

PubMed

- ▶ Article by
- ▶ Article by
- ▶ Article by

1. 封云;甄永苏;戴焱;尚伯杨;张敏;何红伟;李保卫;邵荣光.不同力达霉素与抗VI型胶原酶单抗偶联物的抗肿瘤作用[J]. 药学学报, 2007,42(7): 704-709
2. 李顺强;江敏;甄永苏.抗癌抗生素力达霉素与抗IV型胶原酶单链抗体的基因工程组装融合蛋白[J]. 药学学报, 2000,35(7): 488-491
3. 王心华;吴淑英;甄永苏.大黄素对血管生成的抑制作用[J]. 药学学报, 2004,39(4): 254-258
4. 刘建国;江敏;徐琳娜;甄永苏.二甲胺四环素增强博安霉素的抗肿瘤转移作用[J]. 药学学报, 1995,30(9): 668-673
5. 戴焱;刘秀均;甄永苏.抗IV型胶原酶单抗与平阳霉素新型免疫偶联物的抗肿瘤作用[J]. 药学学报, 2006,41(1): 41-46

文章评论 (请注意:本站实行文责自负, 请不要发表与学术无关的内容!评论内容不代表本站观点.)

反馈人	<input style="width: 95%;" type="text"/>	邮箱地址	<input style="width: 95%;" type="text"/>
反馈标题	<input style="width: 95%;" type="text"/>	验证码	<input style="width: 50%;" type="text"/> 1040