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包载TIMP-1重组腺病毒微球的制备及其对肝癌细胞增殖的抑制

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夏 冬 吴 斌 梁建群 余少鸿 徐 亮

泸州医学院 附属医院 普外科，四川 泸州 646000;泸州医学院 附属医院 普外科，四川 泸州 646000;泸州医学院 附属医
涪陵中心医院 肝胆外科，重庆 400800;泸州医学院 附属医院 普外科，四川 泸州 646000

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摘要：

目的：制备携带人基质金属蛋白酶组织抑制因子 1（tissue inhibitors of metalloproteinase 1，TIMP 1）的重组腺
y，PELA）微球，探讨其对HepG2肝癌细胞增殖的影响。方法：采用溶剂挥发法双乳液体系，以可降解的生物材料PELA包裹
微球，测定其粒径、载病毒量、包封率及释放规律。重组腺病毒微球感染HepG2细胞，荧光显微镜观测感染效率，透射电镜
1 mRNA表达；MTT法检测HepG2细胞增殖。结果：成功构建包载 TIMP 1 重组腺病毒的PELA微球，直径约1.965 μ
8efu/mg，在120 h内释放病毒量接近60%，总的释放时间长于240 h。空白微球无毒性PELA病毒微球感染HepG2细胞
pG2细胞的增殖有明显抑制作用，抑制率表达47%。结论：包载 TIMP 1 重组腺病毒的PELA微球可抑制肝癌HepG2细胞
肝癌提供了实验依据。

关键词：肝肿瘤 基质金属蛋白酶组织抑制因子 腺病毒 微球 基因治疗

Preparation of microsphere encapsulating recombinant TIMP-1 adenovirus and its inhibitory effects cells

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XIA Dong WU Bin LIANG Jian-qun YU Shao-hong XU Liang

Department of General Surgery, Affiliated Hospital of Luzhou Medical College, Luzhou 646000, Sichuan, C
Surgery, Affiliated Hospital of Luzhou Medical College, Luzhou 646000, Sichuan, China;Department of Ge
Luzhou Medical College, Luzhou 646000, Sichuan, China;Department of Hepatobiliary Surgery, Fuling Ce
China;Department of General Surgery, Affiliated Hospital of Luzhou Medical College, Luzhou 646000, Sicl

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Foundation of Sichuan Province (No.090210)

Abstract:

Objective: To prepare poly DL lactide poly (PELA) microspheres encapsulating recombinant tissue inh
1) adenovirus, and to investigate their effects on the proliferation of hepatocellular carcinoma HepG2 cel
constructed by encapsulating recombinant adenovirus containing TIMP 1 in biodegradable PELA. The diar
of virus encapsulated, loading rate, and releasing kinetics were measured. HepG2 cells were infected wi
efficiency was examined by fluorescent microscope; and the ultrastructure was observed by TEM. The ex
cells was examined by semi quantitative RT PCR, and the proliferation of HepG2 cells was detected by MT
encapsulating recombinant TIMP 1 adenovirus was successfully constructed, with its diameter, entrapme
being 1.965, 60.0%, and 10.5×10 8/mg, respectively. About 60% of the viruses were released within 1
was longer than 240 h. Infection with rAdTIMP 1 PELA microsphere efficiently induced TIMP 1 express
inhibited the proliferation of HepG2 cells, with the inhibitory rate being 47%. Conclusion:PELA microsphe
1 adenovirus can markedly inhibit the proliferation of HepG2 cells, which provides an experimental basis
chemistry and gene therapy for treatment of hepatocellular carcinoma.

Keywords:hepatocellular carcinoma tissue inhibitors of metalloproteinase adenovirus microsphere ge