学报简介

第二军医大学学报 ISSN 0258-879X CN 31-1001/R

ACADEMIC JOURNAL OF SECOND MILITARY MEDICAL UNIVERSITY

徐楠[1] 邹豪[2] 范国荣[3] 温海[1] 陈江汉[1]. 两性霉素B聚氰基丙烯酸正丁酯纳米粒的制备及小鼠体内分布研究[J]. 第二军医大学学报, 2007, 28(3):0242-0245

两性霉素B聚氰基丙烯酸正丁酯纳米粒的制备及小鼠体内分布研究 点此下载全文

徐楠[1] 邹豪[2] 范国荣[3] 温海[1] 陈江汉[1]

[1]第二军医大学长征医院皮肤性病科, 上海200003 [2]第二军医大学药学院药剂学教研室, 上海200433 [3]第二军医大学药学院药物分析学教研室, 上海200433

基金项目：上海市科委纳米专项基金(0452nm016)

DOI：10.3724/SP.J.1008.2007.00242

摘要：

目的：制备携载两性霉素的聚氰基丙烯酸正丁酯纳米粒(AmB-PBCA-NP)，研究其对血脑屏障的透过能力。方法：孵化法制备AmB-PBCA-NP，以聚山梨酯-80进行表面修饰，建立高效液相色谱分析法，流动相选择乙腈-水(40∶60)及4%乙酸，405 nm处检测。小鼠分3组，每组28只，分别注射AmB粉针剂、脂质体(AmB-L)及纳米制剂(AmB-PBCA-NP)，通过检测小鼠脑组织等脏器中的药物浓度，评价其主动脑靶向作用。结果：AmB-PBCA-NP平均粒径94.38 nm，平均包封率为82%，载药量56.1%。给药后AmB粉针剂组小鼠脑内未能检测出药物，AmB-L组于3 h后测得微量浓度，而AmB-PBCA-NP组小鼠30 min即测得可观浓度，3 h后达133 ng/g。结论：聚山梨酯-80修饰的AmB-PBCA-NP具有主动脑靶向作用。[

关键词：脑膜炎 隐球菌性 两性霉素B 聚氰基丙烯酸正丁酯 血脑屏障

Preparation of amphotericin B-polybutylcyanoacrylate-loaded nanoparticles and its distribution in mice Download Fulltext

XU Nan ZOU Hao FAN Guo-rong WEN Hai CHEN Jiang-han

1. Department of Dermatology, Changzheng Hospital, Second Military Medical University, Shanghai 200003, China; 2. Department of Pharmaceutics, School of Pharmacy, Second Military Medical University, Shanghai 200433 ; 3. Department of Pharmaceutical Analysis, School of Pharmacy, Second Military Medical University, Shanghai 200433

Fund Project:

Abstract:

Objective: To prepare amphotericin B-polybutylcyanoacrylate-loaded nanoparticle (AmB-PBCA-NP) and to assess their ability to pass the blood-brain barrier. Methods: AmB-PBCA-NP was prepared by incubation, with the surface modified by polysorbate 80. High-performance liquid chromatography (HPLC) method was established using acetonitrile and water (40 : 60, 4% of acetic acid) as mobile phase; detection was done at 405 nm. Mice were divided into 3 groups: AmB- injected, AmB-lipid-injected, and AmB-PBCA-NP-injected group. Brain-targeting ability of AmB-PBCA-NP was then evaluated by determination of AmB concentrations in mice brain and other specimens. Results: The mean diameter of the prepared AmB- PBCA-NP was 94.38 nm; the mean entrapment efficiency of the particles was 82% ; and the drug loading rate was 56.10%. It was found that AmB alone failed to pass the blood-brain barrier; only very low level of AmB was detected in AmB-lipid group 3 h after injection; moderate concentration of Amb was detected 30 min after injection of AmB-PBCA-NP and the concentration peaked at 133 ng/g 3 h after injection. Conclusion: AmB-PBCA-NP modified by polysorbate 80 can pass the blood-brain barrier

Keywords:meningitis cryptococcal amphotericin B polybutylcyanoacrylate blood-brain barrier

查看全文 查看/发表评论 下载PDF阅读器