中国药剂学杂志 2009 7 (4): 282-289 ISSN: 1476-8186 CN: 11-5350/TP

中药药剂学

喷雾干燥法制备桃金娘油肠溶微囊

曾雪萍,李可,唐星

沈阳药科大学 药学院，辽宁 沈阳 110016

收稿日期 2009-3-2 修回日期 2009-6-30 网络版发布日期 2009-7-30 接受日期 2009-4-2

摘要
目的 以丙烯酸树脂Ⅱ号为囊材制备桃金娘油肠溶微囊。方法 桃金娘油按照不同处方分别制备成 O/W 乳液(E 法)和加液研磨被 β-环糊精固化吸附(C 法)后，采用喷雾干燥法制备肠溶微囊。考察微囊的外观形态、粒径分布、载药量和包封率以及体外释放。结果 喷雾干燥法制备的微囊均呈细粉状；C 法所制微囊的平均粒径为 11.12 μm，载药量为 (9.4±0.1)%，包封率为 65.7%；E法其最优处方所制微囊的平均粒径为 7.15 μm，载药量为(7.5±0.3)%，包封率为 40.5%。微囊在模拟胃液中 2 h 基本无释放，在 pH=6.8 的缓冲盐溶液中 90 min 均释放 80% 以上。结论 环糊精固化吸附后能较明显增加微囊的载药量和包封率。两种方法制得的微囊均有肠溶特性，在 pH=6.8 的缓冲盐溶液中释放符合零级释放规律。

关键词 药剂学 桃金娘油 肠溶微囊 喷雾干燥法 丙烯酸树脂Ⅱ β-环糊精

分类号 r94

Preparation of enteric myrtle oil microcapsules by spray-drying

ZENG Xueping,LI Ke,TANG Xing

School of Pharmacy,Shenyang Pharmaceutics University,Shenyang China,110016

Abstract
Objective To prepare the enteric myrtle oil microcapsules by spray-drying using eudragit Ⅱas the coating material. Methods Firstly, the myrtle oil was either processed into O/W emulsions with the enteric coating materials (method E) or suspended in the coating material solution after being triturated with β-CD (method C). Then the emulsion or the suspension was spray-dried. The appearance, diameter, drug loading capacity, encapsulation efficiency and drug release percentages in vitro were evaluated. Results The microcapsules prepared by spray-drying were fine powder. The microcapsules prepared by method C had a mean diameter of 11.12 μm, the drug loading capacity was (9.4±0.1)% and the encapsulation efficiency was 65.7%. In contrast, the mean diameter of the microcapsules prepared by method E was 7.15 μm, the drug loading capacity was (7.5±0.3)% and the encapsulation efficiency was 40.5%. The accumulated release of myrtle oil from the microencapsules prepared by the two methods was both less than 1% after 2 h in mimic gastric juice (pH =1.2) and up to 80% after 1.5 h in mimic intestinal juice(pH = 6.8). Conclusions The β-CD-complexation could obviously increase the drug loading capacity and encapsulation efficiency. The release in vitro indicated that the microcapsules pepared with eudragit Ⅱhave the enteric dissolution property and the release behavior of the microcapsules conformed to the zero order kinetics at pH = 6.8.

Key words pharmaceutics myrtle oil enteric microcapsule spray-drying eudragitⅡ β-CD

DOI:

通讯作者 唐星 tangpharm@sina.com

作者个人主页 曾雪萍;李可;唐星