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论文

# 夹芯渗透泵片用于水不溶性药物的控制释放夹芯渗透泵片用于水不溶性药物的控制释放

刘龙孝;姜吉善;李钟文;李海邦

1. 浙江大学玉泉校区 药学院, 浙江 杭州 310027; 2. 全北大学 高分子工学科, 韩国 全州561－756; 3. 韩国化学研究院 生物材料研究室, 韩国 大田305－600

摘要：

目的研究夹芯渗透泵片用于水不溶性药物的24 h控制释放。方法以硝苯吡啶为模型药物,制备夹芯渗透泵片,研究处方、释药孔径等因素对夹芯渗透泵片释药规律的影响,并考察包衣的机械性质。结果药物层中聚氧乙烯和膨胀层中氯化钾对释药的正面影响最大。在0.50～1.40 mm,孔径对释药影响不大。醋酸纤维素包衣牢固可靠,能承受0.34～2.85 MPa的内压。结论夹芯渗透泵片能24 h匀速释放水不溶性药物。环境介质和搅拌对释药的影响不大。与市售双层渗透泵片相比,夹芯渗透泵片免去了打孔前的药物层辨认过程,制备过程简化。

关键词： 夹芯渗透泵片 水不溶性药物 硝苯吡啶 控制释放

## Sandwiched osmotic pump tablet for controlled release of water-insoluble drug

LIU Long-xiao; Gilson Khang; John Moon Rhee; Hai Bang Lee

Abstract:

AimTo study sandwiched osmotic pump tablet for delivering water-insoluble drug for 24 hours. MethodsSandwiched osmotic pump tablet was prepared using nifedipine as the model drug. The effects of various formulation variables and orifice size on drug release were studied. The mechanical properties of cellulose acetate membrane were also investigated. ResultsPolyethylene oxide of drug layer and potassium chloride of push layer showed marked positive effects on drug release. In the range of 0.50 mm to 1.40 mm, orifice size hardly affects drug release. Cellulose acetate membrane is strong enough to assure the integrity of osmotic pump tablet and could sustain an internal pressure ranging from 0.34 MPa to 2.85 MPa. Conclusion Sandwiched osmotic pump tablet can deliver water-insoluble drug constantly for 24 hours. Release media and agitation rate scarcely affect drug release. Compared with the commercialized push-pull osmotic pump tablet, sandwiched osmotic pump tablet is easy in preparation with exempting identification of drug layer before drilling.

Keywords: water-insoluble drug nifedipine controlled release sandwiched osmotic pump tablet

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作者简介:

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