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喷雾干燥法制备面向粉雾剂的三七总皂苷-丹参酮ⅡA复合粒子及其表征

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中文摘要:目的:制备供肺部吸入给药的三七总皂苷-丹参酮ⅡA复合干粉粒子,探索一种能够使中药复方中多元组分同步到达吸收部位的干粉粒子制备方法。方法:采用喷雾干燥法制备三七总皂苷-丹参酮ⅡA复合粒子,利用扫描电镜(SEM)、激光共聚焦显微(CLSM)、X-射线衍射(XRD)、红外分析(IR)、干法激光粒度分析、高效液相色谱(HPLC)对复合粒子进行表征,并利用新一代雾粒分布仪(NGI)对复合干粉粒子的空气动力学行为进行评估。结果:所制得的干粉粒子具有较窄的粒径分布范围,良好的空气动力学行为,能实现多组分药物同步给药。结论:利用喷雾干燥的方法能够将理化性质差异大的中药组分结合在同一个粒子中,制成符合吸入给药要求的中药复合粒子。

中文关键词:中药复合粒子 喷雾干燥 吸入粉雾剂

Preparation of *Panax notoginseng* saponins-tanshinone ⅡA composite method for pulmonary delivery with spray-drying mothod and its characterization

Abstract:Objective: To prepare panax notoginseng saponins-tanshinone ⅡA composite particles for pulmonary delivery, in order to explore a dry powder particle preparation method ensuring synchronized arrival of multiple components of traditional Chinese medicine compounds at absorption sites. **Method:** *Panax notoginseng* saponins-tanshinone ⅡA composite particles were prepared with spray-drying method, and characterized by scanning electron microscopy (SEM), confocal laser scanning microscope (CLSM), X-ray diffraction (XRD), infrared analysis (IR), dry laser particle size analysis, high performance liquid chromatography (HPLC) and the aerodynamic behavior was evaluated by a Next Generation Impactor (NGI). **Result:** The dry powder particles produced had narrow particle size distribution range and good aerodynamic behavior, and could realize synchronized administration of multiple components. **Conclusion:** The spray-drying method is used to combine traditional Chinese medicine components with different physical and chemical properties in the same particle, and product into traditional Chinese medicine compound particles in line with the requirements for pulmonary delivery.

keywords:traditional Chinese medicine compound particle spray drying powder inhalation

评论

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