

论文

雷公藤内酯醇在Beagle犬体内的药代动力学

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摘要:

雷公藤内酯醇(triptolide, TP)是雷公藤的主要有效成分之一。研究不同剂量TP在Beagle犬灌胃给药时的绝对生物利用度和药代动力学, 可望为其临床研究提供参考。以泼尼松龙作内标, 用乙酸乙酯液液萃取, 建立LC-APCI/MS选择性离子监测方法测定血浆TP浓度。Beagle犬分别静脉注射TP 0.05 mg·kg<sup>-1</sup>、灌胃TP 0.05, 0.08和0.1 mg·kg<sup>-1</sup>进行药代动力学和绝对生物利用度研究。结果表明, TP在1~200 ng·mL<sup>-1</sup>呈良好线性关系( $r=0.9997$ ), 批内和批间精密RSD均小于10%, 准确度在95.0%~105.0%, 提取回收率大于75%。静注0.05 mg·kg<sup>-1</sup> TP后,  $T_{1/2\beta}$ 为(2.5±0.8) h。3个剂量灌胃组,  $T_{max}$ ,  $T_{1/2\alpha}$ 和 $T_{1/2\beta}$ , 经检验无统计学差异。AUC和 $C_{max}$ 与剂量之间线性相关。灌胃0.05 mg·kg<sup>-1</sup>后, TP在Beagle犬体内绝对生物利用度为(75±17)%。可见, LC-APCI/MS法灵敏、可靠、专属性强, 可用来测定Beagle犬血浆TP的浓度; TP在Beagle犬体内消除较快, 灌胃给药生物利用度较高。

关键词: 雷公藤内酯醇 液相色谱-质谱联用 药代动力学 绝对生物利用度

Pharmacokinetics of triptolide in Beagle dogs

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Abstract:

The aim of this paper is to develop and validate a rapid and sensitive LC-APCI/MS method for the determination of triptolide (TP) in plasma and to study the pharmacokinetic properties of TP in Beagle dogs. Sample preparation consisted of liquid-liquid extraction of interests with ethyl acetate from dog plasma. The analytes and internal standard prednisolone were well separated on a Zorbax Extend-C<sub>18</sub> analytical column. Plasma TP was detected by selected-ion monitoring (SIM) of LC-APCI/MS as its deprotonated molecular ions [M-H]<sup>-</sup> at  $m/z$  358.9. Pharmacokinetic studies were undertaken in dogs following an iv dose of 0.05 mg·kg<sup>-1</sup> of TP or an ig dose of 0.05, 0.08, 0.1 mg·kg<sup>-1</sup>, separately. The pharmacokinetic parameters were calculated by DAS software. Calibration curves were linear over the concentration range of 1-200 ng·mL<sup>-1</sup> of TP with the within- and between-batch precisions less than 10%. The within and between-batch accuracy was 95.0% to 105.0%. Recovery of LC-MS method for TP in plasma was over 75%. The  $T_{1/2\beta}$  was (2.5±0.8) h after intravenous administration of TP at the dose of 0.05 mg·kg<sup>-1</sup>. There were no significant differences in  $T_{max}$ ,  $T_{1/2\alpha}$  and  $T_{1/2\beta}$  among the three ig dosage groups. AUC and  $C_{max}$  increased proportionally with doses. The absolute bioavailability of TP after ig administration of 0.05 mg·kg<sup>-1</sup> was (75±17)%. The LC-MS method for determination of triptolide in dog plasma was sensitive and rapid. It was showed that the elimination of triptolide was rapid. The absolute bioavailability of triptolide given orally was high.

Keywords: LC-MS pharmacokinetics absolute bioavailability triptolide

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1. 侯冬枝;谢长生;杨祥良;徐辉碧;平其能.雷公藤内酯醇新型固体脂质纳米粒微观结构研究[J]. 药学学报, 2007,42(4): 429-433
2. 潘晓东;陈晓春.雷公藤提取物在神经免疫性疾病中的药理效应和机制研究进展[J]. 药学学报, 2008,43(12): 1179-1185
3. 马鹏程;吕燮余;杨晶晶;郑启泰.雷公藤中16-羟基雷公藤内酯醇的分离与鉴定[J]. 药学学报, 1991,26(10): 759-763
4. 于德泉;张东明;王淮滨;梁晓天.雷公藤内酯醇的结构修饰[J]. 药学学报, 1992,27(11): 830-836
5. 张凡;李援朝.雷公藤内酯醇的结构修饰研究进展[J]. 药学学报, 2004,39(10): 857-864

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