

论文

大鼠血浆中马来酸曲美布汀的HPCE测定法及药物动力学

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摘要:

目的 建立快速、准确测定大鼠血浆中马来酸曲美布汀浓度的HPCE方法,并用于其在大鼠体内的药物动力学研究。方法 以盐酸麻黄碱为内标,0.03mol·L<sup>-1</sup>磷酸二氢钠(pH6.0)为运行缓冲溶液,紫外检测波长为214nm。血浆样品经乙腈除蛋白后,于50℃水浴用氮气吹干,残渣溶于甲醇-水(1:1),进样分析。结果 线性范围5-200μg·L<sup>-1</sup>,日内RSD<14%,日间RSD<13%,回收率为72.8%-87.9%,最低定量浓度为5μg·L<sup>-1</sup>。ig给药30min后,血浆中药物浓度达峰值,T<sub>1/2</sub>(Ke)为173min,Ke为5.6×10<sup>-3</sup>min<sup>-1</sup>,AUC为7.83μg·min·mL<sup>-1</sup>。结论 方法灵敏度高,操作简便,适用于马来酸曲美布汀的药物动力学研究。

关键词: 马来酸曲美布汀; 高效毛细管电泳法; 药物动力学

HPCE DETERMINATION OF TRIMEBUTINE MALEATE IN RAT PLASMA AND ITS PHARMACOKINETICS

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Abstract:

AIM To develop a method for the determination of trimebutine maleate in rat plasma by using high performance capillary electrophoresis. The method was employed to pharmacokinetic analysis of trimebutine maleate. METHODS Plasma samples were deproteinized with acetonitrile (containing ephedrine hydrochloride as internal standard) and the supernatant was dried under N<sub>2</sub> stream at 50℃. The residue was dissolved with methanol-water (1:1) and injected into the capillary by siphon. The electrophoresis was performed in uncoated fused-silica capillary and the voltage was 10 kV. The running buffer was 0.03 mol·L<sup>-1</sup> NaH<sub>2</sub>PO<sub>4</sub> (pH 6.0). The eluate was detected at 214 nm by UV detection. RESULTS The recovery for trimebutine maleate in rat plasma was 72.8%-87.9%. The calibration curve in plasma was linear over the range 5-200 μg·L<sup>-1</sup>. The limit of quantitation was 5 μg·L<sup>-1</sup>. The intraday relative standard deviation (n=6) and the interday relative standard deviation (n=18) were less than 14%. The highest concentration in plasma was observed at 30 min after ig trimebutine maleate to rats. The pharmacokinetic results were AUC<sub>0-∞</sub>=8 μg·min·mL<sup>-1</sup>, T<sub>1/2</sub>(Ke)=173 min and Ke=5.6×10<sup>-3</sup> min<sup>-1</sup>. CONCLUSION The method is accurate, sensitive and suitable for pharmacokinetic study of trimebutine maleate.

Keywords: high performance capillary electrophoresis pharmacokinetics trimebutine maleate

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