

论文

HPLC法同时测定人血浆中的伪麻黄碱和氯苯那敏

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摘要:

目的建立同时测定血浆中盐酸伪麻黄碱、马来酸氯苯那敏的方法。方法采用反相HPLC法,以右美沙芬为内标,血浆中的被测药物经甲基叔丁基醚提取、1.5%盐酸溶液反萃后同时测定。色谱柱:C₁₈(250 mm×4.6 mm ID,5 μm);流动相:乙腈-水-三乙胺(46:54:0.2,内含10 mmol·L⁻¹十二烷基硫酸钠,60 mmol·L⁻¹磷酸二氢钠,以磷酸调pH为2.6);检测波长:200 nm。结果伪麻黄碱、氯苯那敏的线性范围分别为1.5~0.01 mg·L⁻¹和75.0~0.5 μg·L⁻¹,检测限分别为10.0和0.5 μg·L⁻¹;日内、日间RSD小于12.4%,方法平均回收率为97.3%~109.4%。结论该法简便、快速,重现性好,灵敏度高,可用于盐酸伪麻黄碱、马来酸氯苯那敏复方制剂的临床药代动力学研究。

关键词: 盐酸伪麻黄碱 马来酸氯苯那敏 高效液相色谱法 人血浆

Simultaneous determination of pseudoephedrine and chlorpheniramine in human plasma by HPLC-UV detection method

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Abstract:

AimTo establish a sensitive and specific method to simultaneous determination of pseudoephedrine and chlorpheniramine in human plasma. MethodsPseudoephedrine and chlorpheniramine were extracted from alkaline plasma with *T*-butyl methyl ether as the base form, and were back-extracted into 1.5% hydrochloride solution. The two drugs were simultaneous determined by RP-HPLC with ultraviolet detection at 200 nm, using dextromethorphan as internal standard. A C₁₈ column (250 mm×46 mm ID) and a mobile phase containing acetonitrile-water-triethylamine (46:54:0.2, containing 10 mmol·L⁻¹ sodium dodecyl sulfate (SDS) and 60 mmol·L⁻¹ NaH₂PO₄, adjusted pH to 2.6 with H₃PO₄) were used. ResultsThe limit of quantification was 10.0 and 0.5 μg·L⁻¹, the linear range was 1.5-0.01 mg·L⁻¹ and 75-0.5 μg·L⁻¹, for pseudoephedrine and chlorpheniramine, respectively. The within-day and between-day RSD were less than 12.4%, and the average recovery was between 97.3%-109.4%. ConclusionThe method was sensitive, specific, simple, and suitable for drug level monitoring in clinical pharmacokinetic study.

Keywords: chlorpheniramine HPLC human plasma pseudoephedrine

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