

中药药理学

离子对反相高效液相色谱法测定人血浆中盐酸二甲双胍含量

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收稿日期 2003-9-5 修回日期 2003-11-5 网络版发布日期 2003-11-30 接受日期 2003-10-5

摘要

目的 建立测定人血浆中盐酸二甲双胍含量的离子对反相高效液相色谱法。方法 血浆样品用乙腈沉淀蛋白, 上清液用二氯甲烷萃取其中的乙腈, 浓缩后的上清液直接进样测定。色谱柱为Diamonsil™ C18柱; 流动相为甲醇-0.005 mol/L-1磷酸二氢铵(体积比35:65, 含庚烷磺酸钠 0.01 mol/L-1); 流速 1.0 mL/min-1; 检测波长233 nm。结果 盐酸二甲双胍质量浓度在0.02~4.00 mg/L-1内线性关系良好($r=0.9968$), 日内、日间RSD分别 $\leq 6.3\%$ 和 $\leq 12.1\%$, 方法的回收率在92.4%~95.0%之间。结论 方法适用于盐酸二甲双胍的血药浓度测定及药代动力学研究。

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分类号 [R 963](#)

Determination of the content of metformin hydrochloride in the human plasma by ion-paired reversed-phase HPLC

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Abstract

Objective To establish an IP-RPHPLC method for the determination of the drug level of metformin hydrochloride in the human plasma. Method Plasma was precipitated with acetonitrile and the acetonitrile in the supernatant was extracted with dichloromethane, after centrifugation, a 20 μ L of the remained supernatant was injected into HPLC. A Diamonsil™ C18 column was used. The mobile phase consisted of methanol and 0.05 mol/L-1 (NH₄)₂PO₄ (35:65, V:V) with 0.01 mol/L-1 sodium octanesulfonate contained). The flow rate was 1 mL/min-1, and the UV detector was set at 233 nm. Results The linear calibration curves were obtained in the concentration range of 0.02~4.00 mg/L-1 ($r=0.9968$). The within-day and between-day RSD were within 6.3% and 12.1%, respectively. The recoveries of the method were within 92.4%~95.0%. Conclusions The method is simple, reliable and suitable for the determination of metformin hydrochloride in human plasma and the study of its pharmacokinetics.

Key words [pharmaceutics](#) [plasma concentration](#) [IP-RPHPLC](#) [metformin hydrochloride](#)

DOI:

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