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论文

# 正常人口服磷酸川芎嗪的药代动力学研究

蔡伟;董善年;楼雅卿

北京医科大学分析化学教研室,北京1000 83;*本校88届研究生 ;** 本校药理教研室

摘要:

本文建立了用高效液相色谱法测定人体内川芎嗪血药浓度的方法,以C18化学键合硅胶(10μgm)为固定相,以甲醇—水(58:42)为流动相,280 nm检测,安眠酮为内标,进行定量测定,得出检测限为3.5 ng(S/N=4),最低检测血清浓度为17.4 ng/ml,川芎嗪血药浓度在0.029～5.82μg/ml范围内,线性关系良好,方法回收率为99.84%。方法重现性好,专一性强,内源性物质、代谢产物及同时服用的药物均不干扰。用本法测定了健康人口服川芎嗪的药代动力学参数。

关键词: 川芎嗪 高效液相色谱法 药代动力学

## HPLC DETERMINATION OF TETRAMETHYLPYRAZINE IN HUMAN SERUM AND ITS PHARMACOKINETIC PARAMETERS

W Cai; SN Dong and YQ Lou

Abstract:

An HPLC method for the determination of tetramethylpyrazine in serum and application of this method to tetramethylpyrazine deposition studies in human body were described. Tetramethylpyrazine was extracted from alkalinized serum with dichloromethane using methaqualone as internal standard. A RP μ-Bondapak-$C_{18}$ (10μm) column fitted with a variable-wavelength UV spectrophotometer operated at 280 nm was used. The mobile phase was methanol-water (58: 42). The detection limit of the method was 0.0174 μg/ml serum. Assay linearity was shown over the range of 0.0291～5.816 μg/ml serum with a regression coefficient of 0.9999. The extraction recovery was 99.84% and no interference was found from endogenous compounds, metabolites of parent drug or other commonly used drugs. For the serum concentration following oral administration of tetramethylpyrazine capsules to healthy volunteers (n=6), the best fit was found to be with a two compartment open model. After administration of 174.5 mg dose, the pharmacokinetic parameters were as follows. Tp=0.5102 h, Cmax=3.114 μg/ml, AUC=5.893 mg/L·h, $T_{1/2}$ (Ka)=0.1508 h,$T_{1/2}$(α)=0.4855 h, $T_{1/2)}$=2.894 h, Cl=15.7 L· $h^{-1}$, V_c=17.70 L, V=66.77 L.The result imply that tetramethylpyrazine is absorbed rapidly, distributedwidely in the body, and also eliminated at a fairly rapid rate.

Keywords: HPLC Pharmacokinetics Tetramethylpyrazine

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