

论文

血浆中卡托普利及其二硫键代谢物总浓度的测定

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摘要:

为测定血浆中卡托普利及其二硫键代谢物总浓度,以适应临床进行血药浓度监测。用高效液相色谱方法。样品中卡托普利二聚体及卡托普利与氨基酸、血浆蛋白的二硫键结合物采用NaBH₄还原,释放出卡托普利原形,经液-液提取纯化后,以邻苯二甲醛及D-苯丙氨酸进行衍生化。选用反相HPLC法,荧光检测。此法线性范围为5~300ng·ml⁻¹,最低检测限为5ng·ml⁻¹。用本法测定了多名高血压病患者血浆中卡托普利及其二硫键代谢物的总含量,结果证明此法灵敏度高。

关键词: 卡托普利 高效液相色谱法 邻苯二甲醛

DETERMINATION OF CAPTOPRIL PLUS ITS DISULFIDE METABOLITES IN HUMAN PLASMA

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Abstract:

A new and sensituve HPLC method has been developed for the determination of captopril plus its disulfide metabolites (total captopril)in human plasma Captopril disulfides and the drug covalently bound to protein were reduced with sodium borohydride to captopril. A ner liquid-liquid extraction,captopril was treated with o-phthalaldehyde in the presence of D-phenylalanine.The fluorescent derivative of captopril was measured by HPLC using a C-18 reversed phase column with fluorescence detection at the excitation and emission wavelengths of 235 nm and 440 nm. respectively.The mobile phase consisted of a methanol-acetonitrile-phosphate buffer(0.02 mol·L⁻¹. pH 6.4)mixture(30: 30: 135, v/v), and was set at a flow rate of 1 ml·min⁻¹ The linear range of the assay was between 5 ng·ml⁻¹ (lower limit of quantitation)and 300 ng·ml⁻¹ for total caDtopril in plasma The method was successfully applied to determine plasma concentrations of captopril plus its disulfide metabolites in hypertensive patients and was demonstrated to be suitable for the therapeutic drug monitoring.

Keywords: Captopril; HPLC; o-Phthalaldehyde

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