

论文

高效液相色谱法测定尿中美芬妥英及代谢产物4'-羟基美芬妥英

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摘要:

关键词: 美芬妥英 4'-羟美芬妥英 高效液相色谱法

DETERMINATION OF MEPHENYTOIN AND 4'-HYDROXYMEPHENYTOIN IN URINE BY HIGH PERFORMANCE LIQUID CHROMATOGRAPHY

ZR Ruan;YS Cheng and DY Ding

Abstract:

A simple, sensitive and reproducible HPLC assay is described for the determination of mephenytoin and 4'-hydroxymephenytoin in human urine. Phenobarbital was used as an internal standard. The compounds were separated on a U-Bondapak RP-C₁₈ column using a mobile phase of and the UV detectou was set at 210 nm. Calibration curves in the range 0.05~1.00ug/ml for mephenytoin and 0.5~100.0ug/ml for 4'-hydroxymephenytoin were linear (r=0.9998 and r=0.9992, respectively). The average recovery was 95.10±2.95%, and the relative standard deviation within day and day to day was less than 10%. The detection limit for mephenytoin was 25mg/ml and 4'-hydroxymephenytoin was 50mg. ml. The method was used to study the metabolism of S-mephenytoin 4'-hydroxylatoin in 10 healthy volunteers. The 12 h urinary metabolic ratio (MR) and hydroxylation index (HI) were calculated to express interindividual variation in metabolism. Two of them exhibited defective 4'-hydroxylation of S-mephenytoin as poor metabolizers (HI: 1349.18 and 409.57; MR: 105.29 and 8.25). In the remaining 8 subjects, the ranged from 1.68 to 6.71 and the MR ranged from 0.002 to 0.014, as extensive metabolizers of S-mephenytoin.

Keywords: 4'-Hydroxymephenytoin HPLC Mephenytoin

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