

论文

血清中美西律的柱前衍生化-液相色谱荧光检测

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摘要:

目的建立血清中盐酸美西律的柱前衍生化-液相色谱荧光检测法。方法血清样品用丙酮液直接沉淀蛋白后,定量加入荧光胺丙酮溶液,得盐酸美西律的荧光衍生物。采用Alltima C<sub>18</sub> (150 mm×4.6 mm,5 μm)为分析柱;流动相为甲醇-水-2.4 mol·L<sup>-1</sup>二乙胺-磷酸缓冲液(pH 4.0)(70:28:2);荧光检测激发波长(E<sub>x</sub>)为392 nm,发射波长(E<sub>m</sub>)为480 nm。盐酸美西律的保留时间为6.5 min。结果盐酸美西律在0.100~6.400 mg·L<sup>-1</sup>线性关系良好。本法的最低检测质量浓度为5 μg·L<sup>-1</sup>, (S/N≥4)。批内、批间精密度为1.34%~5.31%。结论本法操作简便、有良好的灵敏度和专一性,可满足盐酸美西律的临床血药浓度的监测和药代动力学研究。

关键词: 盐酸美西律 柱前衍生化 高效液相色谱荧光检测法 血药浓度

HPLC-fluorescent spectrometric determination of serum mexiletine concentration after derivatization with fluram

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Abstract:

AimTo establish an HPLC-fluorescent spectrometric method for the determination of mexiletine hydrochloride in plasma after derivatization with fluram. MethodsFluram acetone solution was added to the deproteinized plasma with acetone to obtain the derivative of mexiletine. The HPLC method was performed on a column of Allitima C<sub>18</sub> (150 mm×4.6 mm, 5 μm) with the mobile phase of methanol-water-diethylamine-phosphoric acid buffer (2.4 mol·L<sup>-1</sup>, pH 4.0) (70:28:2), and the detective wavelength were set at E<sub>x</sub> 392 nm and E<sub>m</sub> 480 nm. ResultsMexiletine has a liner range over the concentration range from 0.100-6.400 mg·L<sup>-1</sup>. The lowest detectable concentration of this method was 5 μg·L<sup>-1</sup> (S/N≥4). The intra-day and inter-day RSDs were 1.34%-5.31%, respectively. ConclusionThis method is simple, selective and can be used for therapeutic drug monitoring (TDM) and pharmacokinetic studies of mexiletine.

Keywords: pre-column derivatization HPLC-FLU serum drug concentration mexiletine hydrochloride

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