PD-1

Determination of Prazosin in Human Plasma by a Validated HPLC Method with Application to Single-dose Pharmacokinetics

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A rapid and reproducible high performance liquid chromatographic assay of prazosin in human plasma was developed. After addition of internal standard (IS, terazosin hydrochloride) and alkalization of the plasma, the drug and IS were extracted into *t*-butylmethylether. The organic phase was back-extracted into 0.05% phosphoric acid and 50 μl of the acid solution was injected into a reverse-phase C18 column with a mobile phase consisting of water : acetonitrile : triethylamine = 75 : 25 : 0.1 (pH 5.0). The samples were detected utilizing a fluorescence detector. A

Prazosin and IS showed good resolutions and an excellent linear relationship was (r2 = 1) was obtained between the peak area ratios and the corresponding concentrations in the ranges of 0.5-50 ng/ml. The applicability of the method was demonstrated by analysis of plasma after oral administration of a single 2-mg dose to 16 healthy subjects. From the plasma prazosin concentration vs. time curves, the mean AUCo→12 was 108.4±74.2 ng?h/ml and Cmax of 23.1 ng/ml reached 2.1 h after administration. The mean biological half-life of prazosin was 2.5 ± 0.6 h.

Based on the results, this simple and validated assay could readily be used in any pharmacokinetic studies using humans.

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