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Simultaneous Determination of Cyclophosphamide and Ifosfamide in Plasma Using SPE-HPLC-UV Method

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SUMMARY. A reproducible and selective method for the simultaneous determination of cyclophosphamide (CP) and ifosfamide (IF) in plasma has been developed and validated using isocratic elution. The assay is performed by HPLC-UV, with a C18 column (5μm, 150 x 4 mm) and detection in 195 nm. The mobile phase was constituted by phosphate buffer 10 mM pH 6.0: acetonitrile (77.25:22.75), with a flow of 1 mL/min. SPE was used for sample clean-up in a range from 3 (LOQ) to 540 μM. The repeatability coefficients of variation (CV) ranged from 0.5 to 7.8% and the intermediate precision CVs varied from 0.9 to 5.7%. Extraction efficacy and accuracy varied from 94 to 115%. The simple method may permit the determination of cyclophosphamide and ifosfamide in plasma, simultaneously, to pharmacokinetics and bioequivalence studies.

KEY WORDS: Antineoplastic drugs; HPLC, Cyclophosphamide, Ifosfamide, Simultaneous determination.

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