Latin American Journal of Pharmacy
(formerly *Acta Farmacéutica Bonaerense)*
Lat. Am. J. Pharm. **32** (4): 587-92 (2013)

Regular Article
Received: March 2, 2013
Revised version: March 13, 2013
Accepted: March 14, 2013

HPLC-UV Detection Method for Quantification of Loxoprofen in Human Plasma with Liquid-Liquid Extraction Technique: Application in Pharmacokinetic Study

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***SUMMARY*. A rapid, simple and sensitive HPLC-UV method was developed and successfully applied to the pharmacokinetic determination of loxoprofen sodium (a non steroidal anti inflammatory drug) in healthy humans. Prior to analysis, the analyte together with internal standard (ketoprofen) was extracted from human plasma by liquid-liquid extraction using ethyl acetate. Efficient chromatographic separation was achieved on Hypersil BDS C18 column (250×4.6 mm i.d, 5 μm) with an isochratic mobile phase containing acetonitrile and water (40:60) adjusted to pH 3.0 with ortho phosphoric acid, at a constant flow rate of 1.0 mL/min. The calibration curve over range of 0.10 to 10.0 μg/mL was linear ($r^2 = 0.9991$) with a weighted ($1/C^2$) least square method (CV and RE within ± 10%). The lower limit of quantification was 0.10 μg/mL. Recovery of loxoprofen and ketoprofen was 67-69%. Accuracy presented in the form of % RE for intra- and inter-day determination was within ± 10%.**

KEY WORDS: HPLC-UV, Liquid-liquid extraction, Loxoprofen, Pharmacokinetic.

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