Scopus

Document details

Back to results | 1 of 1

Export Download Print E-mail Save to PDF Add to List More...

International Journal of Pharmacy and Pharmaceutical Sciences
Volume 6, Issue 11, 2014, Pages 167-170

Open Access

High performance liquid chromatographic determination of mefenamic acid in human plasma using uv vis detector (Article)

Helal Uddin, A.B.M., Mohamad, H.J., Al-Aama, M., Amiruddin, N.

Department Of Pharmaceutical Chemistry, International Islamic University Malaysia (IIUM), Jalan Istana, Bandar Indera Mahkota, Kuantan, Pahang, Malaysia

Abstract

View references (9)

Objective: Mefenamic Acid (MA) is a non-steroidal anti-inflammatory drug (NSAIDs). This drug provides analgesic and antipyretic (fever reducing effect) and higher doses, anti-inflammatory effect. This study is focused to develop a rapid and sensitive method for the detection of mefenamic acid in human plasma.

Methods: Protein precipitation technique using acetonitrile was used. Chromatographic separation was achieved on Agilent Zorbax Eclipse XDB-C_{18} (150 mm x 4.6 mm, i. d 3.5 µm) with a mobile phase consisting of acetonitrile and 2% triethylamine (pH was adjusted to 4.2 with phosphoric acid) in a ratio of 60:40. The retention time for mefenamic acid and diclofenac was 5.4 and 3.9 minutes respectively. The mefenamic acid was monitored at 280 nm using variable-wavelength detector.

Results: The recovery was found 83% for MA. The method was validated according to the Centre for Drug Evaluation and Research (CDER) guidelines. Calibration plot was linear within the range from 250 to 5000ng ml^{-1} with the coefficient of determination (r2) of ≥ 0.99. The quality control samples of mefenamic acid which was termed as low (L), medium (M) and high (H) were analysed to get the precision and accuracy. The accuracy for intra-day for L, M and H was 99.71%, 93.8% and 89.52% while for inter day were 97.67%, 93.46% and 91.67% respectively. On the other hand, coefficient variance (CV) for intra-day precision for L, M and H was found 2.57%, 2.45% and 1.45% and for inter day CV were 3.11%, 5.5% and 4.37% respectively. Diclofenac sodium was used as internal standard for this study.

Conclusion: The results were in compliance with CDER guideline.

Author keywords

HPLC Human plasma Mefenamic Acid Protein precipitation UV detector

Indexed keywords

EMTREE drug terms: mefenamic acid

EMTREE medical terms: Article controlled study drug determination drug stability high performance liquid chromatography limit of detection limit of quantitation measurement accuracy measurement precision precipitation sensitivity and specificity

Chemicals and CAS Registry Numbers:

mefenamic acid, 61-68-7