Latin American Journal of Pharmacy
(formerly *Acta Farmacéutica Bonaerense)*
Lat. Am. J. Pharm. **32** (4): 568-74 (2013)

Regular Article
Received: November 9, 2012
Revised version: February 25, 2013
Accepted: February 28, 2013

A Stability-Indicating High Performance Liquid Chromatographic (HPLC) Assay for the Determination of Cefaclor in Biological Fluid

Wael A. ABU DAYYIH *[1], Eyad M.MALLAH [1], Faisal T. AL-AKAYLEH [2], Mohammed F. HAMAD [3] & Tawfiq A. ARAFAT [1]

[1] *Department of Pharmaceutical Medicinal Chemistry and Pharmacognosy,*
[2] *Department of Pharmaceutics and Pharmaceutical Technology &*
[3] *Department of Pharmacology and Biomedical Science, Faculty of Pharmacy and Medical Sciences, Petra University, Amman-Jordan*

***SUMMARY*. While determining cefaclor in biological fluid, it could be degraded due to oxidation hydrolysis and racemisation. Furthermore, such degradation process can be accelerated depending on pH, temperature, carbon dioxide, oxygen, light, humidity and storage. Thus such measures are crucial in cefaclor determination in biological fluids and reducing or inhibiting the degradation process while assaying is mandatory. In the developed method, samples were assayed without pretreatment or with perchloric acid and protein precipitation treatment. Sulphamethoxazole as an internal standard was used. Chromatographic separation was carried out on with lichrospher RP-18 column using mobile phase 80:20 v/v (potassium dihydrogen phosphate buffer (0.067M): methanol, pH 4.5), hexane-1-sulphonic acid sodium salt (0.002 M) was used as an ion pair and the flow rate was 1.3 mL/min. Cefaclor was monitored using UV detector at λ 265 nm. Pre-sample treatment with perchloric acid as acidifying agent and plasma protein precipitant was found to enhance stability of cefaclor. The calibration curve was demonstrated to be linear in the range of 0.25-20 μg/mL (r^2 = 0.999) and the limit of quantitation was estimated at 0.25 μg/mL. In conclusion, a stability-indicating, accurate, precise, simple, and highly sensitive reversed phase HPLC method for the determination of cefaclor in biological fluids was developed and can be successfully used in bioequivalence study and other pharmacokinetic evaluation.**

KEY WORDS: Biological fluid, Cefaclor, HPLC, Stability, Sulphamethoxazole.

* Author to whom correspondence should be addressed. *E-mail:* wabudayyih@uop.edu.jo

ISSN 0326-2383