Accepted Manuscript

An efficient spectrofluorimetric method adopts doxazosin, terazosin and alfuzosin coupling with orthophthalaldehyde: Application in human plasma



Mahmoud A. Omar, Abdel-Maaboud I. Mohamed, Sayed M. Derayea, Mohamed A. Hammad, Abobakr A. Mohamed

| PII: | S1386-1425(18)30103-3 |
|-------------------|---|
| DOI: | https://doi.org/10.1016/j.saa.2018.01.077 |
| Reference: | SAA 15796 |
| To appear in: | Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy |
| Received date: | 2 October 2017 |
| Revised date: | 30 November 2017 |
| Accepted date: | 30 January 2018 |

Please cite this article as: Mahmoud A. Omar, Abdel-Maaboud I. Mohamed, Sayed M. Derayea, Mohamed A. Hammad, Abobakr A. Mohamed , An efficient spectrofluorimetric method adopts doxazosin, terazosin and alfuzosin coupling with orthophthalaldehyde: Application in human plasma. The address for the corresponding author was captured as affiliation for all authors. Please check if appropriate. Saa(2017), https://doi.org/10.1016/j.saa.2018.01.077

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

ACCEPTED MANUSCRIPT

An efficient spectrofluorimetric method adopts doxazosin, terazosin and alfuzosin coupling with orthophthalaldehyde: Application in human plasma

Mahmoud A. Omar^a, Abdel-Maaboud I. Mohamed^b, Sayed M. Derayea^a, Mohamed A. Hammad^a and Abobakr A. Mohamed^a

^a Analytical Chemistry Department, Faculty of Pharmacy, Minia University, Minia, Egypt

^b Pharmaceutical Analytical Chemistry Department, Faculty of Pharmacy, Assiut University, Assiut, Egypt

ABSTRACT

A new, selective and sensitive spectrofluorimetric method was designed for the quantitation of doxazosin (DOX), terazosin (TER) and alfuzosin (ALF) in their dosage forms and human plasma. The method adopts efficient derivatization of the studied drugs with ortho-phthalaldehyde (OPA), in the presence of 2-mercaptoethanol in borate buffer (pH 9.7) to generate a highly fluorescent isoindole derivatives, which can strongly enhance the fluorescence intensities of the studied drugs, allowing their sensitive determination at 430 nm after excitation at 337 nm. The fluorescence-concentration plots were rectilinear over the ranges (10.0–400.0) ng/mL. Detection and quantification limits were found to be (0.52-3.88) and (1.59-11.76) ng/mL, respectively. The proposed method was validated according to ICH guidelines, and successfully applied for the determination of pharmaceutical preparations of the studied drugs. Moreover, the high sensitivity of the proposed method permits its successful application to the analysis of the studied drugs in spiked human plasma with % recovery (96.12 \pm 1.34 -100.66 \pm 0.57, n = 3). A proposal for the reaction mechanism was presented.

Keywords: Doxazosin; terazosin; alfuzosin; orthophthalaldehyde; spectrofluorimetry; spiked human plasma

Download English Version:

https://daneshyari.com/en/article/7669471

Download Persian Version:

https://daneshyari.com/article/7669471

Daneshyari.com