

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 ± 1.34 - 100.66 ± 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](https://daneshyari.com)