

Spectrophotometric Methods for Quantitative Determination of Binary Mixture of Naproxen Sodium and Domperidone Maleate

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Abstract

Simple, accurate, sensitive and precise UV spectrophotometric methods were developed and validated for quantitative determination of binary mixture of Naproxen sodium (NAP) and Domperidone maleate (DOM) in their bulk powder and pharmaceutical dosage forms. NAP was determined in presence of DOM by direct spectrophotometry at λ_{max} 331 nm. Four spectrophotometric methods, namely; isoabsorptive point (I), ratio subtraction (II), ratio difference (III) and mean centering (IV) were developed for the spectral resolution of DOM when present in mixture with NAP without preliminary separation. In method (I), the isoabsorptive point (Aiso) at 274.7nm was chosen for determination of DOM while in method (II), DOM was determined at λ_{max} 287 nm after subtraction of interference exerted by NAP. In method (III), absorption spectra of DOM were recorded, divided by suitable divisor of NAP then measuring the absorption difference at 280 and 294 nm to obtain the corresponding concentrations of DOM. In method (IV), absorption spectra of each drug were recorded, DOM spectra were divided by suitable divisor of NAP and the obtained ratio spectra were mean centered. The concentrations of DOM was then determined from the calibration graphs obtained by measuring amplitudes at 295nm. The developed methods were validated according to ICH guidelines demonstrating good accuracy and precision.

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