A Rapid and Sensitive HPLC Assay of Some Concomitant Anti-Migraine Drugs

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Abstract

This work describes a simple and sensitive method for simultaneous determination of zolmitriptan, naproxen and propranolol in their dosage forms using HPLC. The drugs were separated isocratically on a Zorbax C8 (4.6 × 250 mm with 5 µm particle size) column using a mobile phase composed of 20 mM phosphate citrate buffer [0.1% TEA (pH 3.1)]:methanol:THF (5:3:2, by volumes). The detection was accomplished fluorometrically setting the excitation wavelength at 280 nm and emission wavelength at 360 nm. The method was validated over a linearity range of 100-900 ng/mL for zolmitriptan, 50-300 ng/mL for naproxen and 100-800 ng/mL for propranolol. The assay was successfully applied to the determination of the studied drugs in pharmaceutical dosage forms without interference from tablet excipients with high specificity. The method can be applied successfully in the future for the pharmacokinetic study of these drugs in the human plasma with high accuracy especially that LOQs of zolmitriptan and propranolol in the proposed method cover their Cmax.

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