A validated stability-Indicating method for the determination of sumatriptan and kinetic study of the degradation

Hayam Lotfy, Hayam M Lotfy · Mamdouh R Rezk · Adel M Michael · Ayman O S El-Kadi · Mostafa A Shehata ·

Professor of Analytical Chemistry

Abstract

A simple, specific, accurate and stability-indicating liquid chromatographic method has been developed for determination of sumatriptan in the presence of its alkaline degradation product and in pharmaceutical formulation. The analysis was carried out on Grace C18 (2.1 x 250 mm with 5 µm particle size) column with a mobile phase consisting of water (contains 0.1 % triethylamine, adjust pH to 6.5 by phosphoric acid): acetonitrile in the ratio (6 : 4, v/v). The detection was accomplished fluorometrically setting the excitation wavelength at 225 nm and emission wavelength at 350 nm. The retention time was 4.1 min. and 5.2 min. for sumatriptan and its alkaline degradation, respectively, at flow rate 0.2 mL min⁻¹. The developed and validated method was successfully applied to the analysis of pharmaceutical formulation. The calibration curve was linear over the range 50-800 ng mL⁻¹. The LOD and LOQ values were found to be 16.6 and 50 ng mL⁻¹, respectively. Statistical analysis of the results has been carried out revealing high accuracy and good precision.

Analytical Chemistry, An Indian drugs - 2013, December