SPECTROPHOTOMETRIC AND SPECTROFLUORIMETRIC DETERMINATION OF PIZOTIFEN MALATE

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Abstract:
Three spectrophotometric (A,B,C) and one spectrofluorimetric (D) methods have been described for the analysis of histamine H₁-receptor antagonist, Pizotifen malate (PZ). The first spectrophotometric method (A) was based upon measuring the absorbance of the investigated drug at \( \lambda = 317 \) nm after its treatment with concentrated sulfuric acid. The second method (B) comprised a reaction between formaldehyde and PZ in the presence of concentrated sulfuric acid. The formed colored chromophore, was measured at \( \lambda = 480 \) nm. In the third method (C), PZ was determined spectrophotometrically by applying the first derivative technique (\( D_1 \)). Quantitative determination was carried out by measuring the first derivative (\( D_1 \)) of the trough at \( \lambda = 238 \) nm. Regression analysis of Beer’s law plots showed good correlation in concentration ranges between 2 - 8, 12 - 60 and 2.4 - 28 µg ml⁻¹ with mean percentage recoveries 99.80 ± 0.84, 100.04 ± 0.74 and 100.47 ± 0.90 for methods A, B and C respectively. The spectrofluorimetric method (D) involved the reaction of the cited drug and citric acid/acetic anhydride system and measuring the relative fluorescence intensity of the reaction product at 485 nm after excitation at 385 nm. Obedience to Beer’s law was achieved in the concentration range 0.3 - 6 µg ml⁻¹ with a mean accuracy of 99.64 ± 0.58. The proposed methods were found sensitive and suitable for the analysis of PZ in bulk and tablet dosage form. The validity of the results was assessed by applying the standard addition technique. The results of the proposed methods were statistically agreed with those of the official method (B.P.2001).