Spectrophotometric quantitation of mebeverine in bulk drug and pharmaceutical formulations using multivariate calibration technique

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Mebeverine hydrochloride is 4-[ethyl(4-methoxy-α-methyl phenethyl) amino] butylveratrate hydrochloride having molecular formula $C_{25}H_{35}NO_5HCl$, molecular weight 466 and melting point 105-107 ºC. It is white or almost white, crystalline powder, freely soluble in water and ethanol (96%), while practically insoluble in diethyl ether.

A sensitive and accurate UV spectrophotometric method with multivariate calibration technique for the determination of mebeverine hydrochloride in bulk drug and different pharmaceutical formulations has been described. This technique is based on the use of the linear regression equations by using relationship between concentration and absorbance at five different wavelengths. The results were treated statistically and were found highly accurate, precise and reproducible. The method is accurate, precise and linear within the range 5-80 μg/ml (r=0.9966). Under optimized conditions the applied numerical method provides considerable resolving power, sensitivity, rapidity, and low cost for the quantitative analysis, quality control and routine analysis of subject compounds. There was no interference from the excipients i.e povidone K 30, magnesium stearate, lactose and hydroxypropylmethylcellulose. This statistical approach gives optimum results for the eliminating fluctuations coming from instrumental or experimental conditions.

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Page 84