Spectrophotometric methods for simultaneous determination of betamethasone valerate and fusidic acid in their binary mixture

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Abstract

Five spectrophotometric methods were successfully developed and validated for the determination of betamethasone valerate and fusidic acid in their binary mixture. Those methods are isoabsorptive point method combined with the first derivative (ISO Point – D1) and the recently developed and well established methods namely ratio difference (RD) and constant center coupled with spectrum subtraction (CC) methods, in addition to derivative ratio (1DD) and mean centering of ratio spectra (MCR). New enrichment technique called spectrum addition technique was used instead of traditional spiking technique. The proposed spectrophotometric procedures do not require any separation steps. Accuracy, precision and linearity ranges of the proposed methods were determined and the specificity was assessed by analyzing synthetic mixtures of both drugs. They were applied to their pharmaceutical formulation and the results obtained were statistically compared to that of official methods. The statistical comparison showed that there is no significant difference between the proposed methods and the official ones regarding both accuracy and precision.

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