Simultaneous Determination of Xipamide and Triamterene by First Derivative, Ratio Difference, and Derivative Ratio Spectrophotometric Methods

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Abstract

Validated, rapid and sensitive spectrophotometric techniques were established for simultaneous determination of Xipamide and Triamterene. The first technique based on determination of Triamterene with zero-crossing of Xipamide using zero order method at 367.0 nm. The second technique based on determination of both Xipamide and Triamterene by first derivative method with zero-crossing of Triamterene and Xipamide respectively, at 265.6 and 388.6 nm. Third technique is ratio difference spectrophotometric method depending on obtaining peak amplitude difference at 256.0 and 273.0 nm for Xipamide and 288.0, 302.0 nm for Triamterene. Fourth method is derivative ratio spectrophotometric method depending on obtaining the first derivative of the ratio spectrum with zero-crossing of Xipamide and Triamterene at 365.2 and 308.6 nm; respectively. Linear relationship was obtained upon using concentration range (1.0-10.0 Õg/mL) for Xipamide and (1.0-16.0 Õg/mL) for Triamterene with LOD less than 0.3 Õg/mL for both drugs. The suggested spectrophotometric techniques showed Lower LOD and more sensitivity other than any reported spectrophotometric methods and were applied in pure and dosage form (EpitensÈ).

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