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Research article

Development and validation of ultraviolet spectrophotometric method for estimated mixture of paracetamol, acetosal and caffeine in tablet dosage form

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Key words: Paracetamol, Acetosal, Caffeine, Derivative Spectrophotometry.

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Abstract

Objective: The aim of this research was to develop and test the validation of derivative spectrophotometry method to determine the level of paracetamol, acetosal, and caffeine in tablet dosage form without prior separation. **Method:** The study was conducted with tablet mixtures of paracetamol, acetosal, and caffeine using derivative spectrophotometry with a zero-crossing technique. Ethanol was used as a solvent for the analysis. **Result:** The results showed that the application of derivative spectrophotometry method on the determination of paracetamol level carried out on the third derivative at λ 267.6 nm (Δλ2), determination of acetosal level performed on the third derivative at λ 236.2 nm (Δλ2), and determination of caffeine level performed on the second derivative at λ 235.8 nm (Δλ 16) resulted in the level of 101.198%, 105.78%, and 107.74% respectively for paracetamol, acetosal, and caffeine. Therefore, it was suggested that result of determination of paracetamol, acetosal and caffeine mixture in tablet is the requirement of united states Pharmacopeial (USP 32 NF 27, 2008). **Conclusion:** The derivative spectrophotometric method fulfilled the requirements of accuracy and precision, so it can be used to determinate the level of paracetamol, acetosal, and caffeine in tablets.