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Development of Derivative Spectrophotometric with Zero Crossing Method for Determination of Paracetamol and Ibuprofen in Tablet

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Abstract: The purpose of this study is to determine paracetamol and ibuprofen in tablet by derivative spectrophotometry with zero crossing method in methanol and distilled water. The results determined analysis wavelength of paracetamol and ibuprofen on the second derivative with $\Delta\lambda = 8$ nm at the wavelength of 253.4 nm and 228.6 nm respectively. The paracetamol levels in NR[®] tablet and OS[®] tablet were $100.03\% \pm 1.28\%$ and $100.11\% \pm 1.55\%$ respectively and ibuprofen were $101.15\% \pm 1.00\%$ and $100.89\% \pm 0.57\%$ respectively. The percent recovery for paracetamol and ibuprofen were 101.11% and 100.40% respectively and relative standard deviation were 2.00% and 1.67% respectively. The proposed method is simple as there is no need for separation, rapid and low cost.

Keywords: Paracetamol, Ibuprofen, Tablet, Derivative Spectrophotometric, Zero-Crossing, Second Derivative.

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