

UV DERIVATIVE SPECTROPHOTOMETRIC ANALYSIS FOR CONCURRENT ESTIMATION OF DAPAGLIFLOZIN PROPANEDIOL MONOHYDRATE, VILDAGLIPTIN AND METFORMIN HYDROCHLORIDE IN COMBINED PHARMACEUTICAL FORMULATION

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(Received 11 April 2025) (Accepted 06 October 2025)

ABSTRACT

The combination of dapagliflozin propanediol monohydrate (DAPA), vildagliptin (VIL) and metformin hydrochloride (MET) helps persons with type 2 diabetes mellitus to more effectively manage their blood sugar levels. The present study addresses the development and validation of first-order derivative spectroscopic method since it shows better resolution of overlapping bands, as combination of these drugs shows small variation in their absorption maxima. The method involves the conversion of zero-order spectra into first-order spectra with a $\Delta\lambda$ of 2 and a scaling factor of 1. The maximum absorbance for MET was recorded at 256 nm, at 217 nm for VIL, and at 205 nm for DAPA in comparison to water as the blank. The environmental impact of the proposed method was quantitatively and semi quantitatively estimated using the analytical greenness and green analytical procedure index and the blue applicability grade index software was used to assess the suggested method's practical efficacy.