Condensation Methods for the Determination of Darunavir in Pure and Pharmaceutical Formulations

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Abstract : Two visible spectrophotometric methods were developed Aand B for the determination of Darunavir in pure and pharmaceutical formulations. The methods are based on condensation reaction with PDAB (Method-A) and ONB (Method-B) in presence of acidic medium with the primaryamine group in DNV. The coloured products exhibit absorption λ_{max} at 639 nm and 452nm for methods A and B respectively. Regression analysis of Beer-Lambert plots showed good correlation in the concentration ranges 10-60μg/ml, 50-300 μg/ml, correlation co-efficients are 0.9983, 0.9989;Sandell's sensitivities are9.9833 x 10^{-3}, 3.0456 x 10^{-2}(1 mole cm^{-1}); and molar absorptivity values are5.4857 x 10^{4},1.7981x 10^{4} (μg cm^{-2}) for methods-Aand B respectively. The proposed methods are applied to commercial available formulations and the results are statistically compared with those obtained by the UV reference method and validated by recovery studies. The results are found satisfactory and reproducible. These methods are applied successfully for the estimation of the DNV in the presence of other ingredients that are usually present in formulations. These methods offer the advantages of rapidity, simplicity and sensitivity and low cost without the need for expensive instrumentation and reagents.

Key words : Condensation, PDAB, ONB, Regression Analysis.

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