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# Determination of Apixaban from Bulk and Tablet Dosage Form by Area Under Curve and First Order Derivative Spectrophotometric Methods

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**Abstract:**A simple, new, precise and reproducible two UV - spectrophotometric methods has been developed for the estimation of Apixaban in bulk and tablet dosage form. Methanol was used as an solvent to prepare standard and sample solutions. For quantitative determination of apixaban by Method A that is area under curve (AUC) values measured at 269.00nm – 289.00nm and Method B that is first order derivative spectroscopy values measured at  $\lambda_{\min} = 266.21\text{nm}$ ,  $\lambda_{\max} = 304.62\text{nm}$  and  $279.09\text{nm} = \text{zero cross}$ . Calibration curve was observed with concentrations 5 – 30  $\mu\text{g/ml}$  ( $R^2 = 0.9998$  and  $R^2 = 0.9999$ ) for methods A and B respectively. Both methods were validated as per ICH guidelines, limit of detection (LOD) and limit of quantitation (LOQ) were determined for respective methods. Accuracy, precision, assay and repeatability studies produce satisfactory results for both methods. The results of all validation parameters was found to be within acceptable limit. Both method A and B has been used to quantify apixaban from bulk and tablet dosage form successfully.

**Keywords:**Apixaban, Area under curve, First order derivative, Analytical method validation, ICH Q2 (R1) guideline.

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