



## Novel Approach for the Determination of Alfacalcidol in Bulk and Tablet Dosage Form using Spectrophotometric Method

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**SUMMARY.** The purpose of the study was to develop a new simple, accurate, precise and economic spectrophotometric method in UV-VIS region for the determination of alfacalcidol in bulk and pharmaceutical tablet dosage form. The proposed method was validated in terms of linearity, accuracy, precision, limits of detection and limits of quantification. It was found that Beer's law was obeyed in range of 0.1-10  $\mu\text{g/mL}$  for alfacalcidol having correlation coefficient ( $R^2$ ) of 0.999. The method has been successfully applied for the analysis of drugs in tablet formulation as well. The percent recovery was found from 99.69 to 100.11% which indicate that the method is precise and reproducible. Limit of detection (LOD) and Limit of quantification (LOQ) of drug were 0.09623 and 0.29161  $\mu\text{g/mL}$ , respectively. Interday and intraday studies showed good repeatability of the applied method. Percentage relative standard deviation values were found less than 2% for proposed methods which illustrate the good precision. It was concluded that proposed method was versatile, cheaper, accurate, selective, precise and rapid for the analysis of alfacalcidol.

**KEY WORDS:** Alfacalcidol, Method validation, UV-Visible spectrophotometry.

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