



## Diclofenac Quantification: Analytical Attributes of a Spectrophotometric Method

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**SUMMARY.** An spectrophotometric UV-visible technique used to quantify diclofenac and its application to pharmaceutical preparations is described, based on diclofenac oxidation by Fe(III) in the presence of o-phenanthroline. The formation of tris(o-phenanthroline)-Fe(II) complex (ferroin) upon diclofenac reaction was investigated. Absorbance of ferroin complex was measured at 506 nm. This method was tested on 50 mg tablets. Operating with placebos, it was found that excipients do not interfere with the determination. A good linearity was found [ $y = (0.0294 \pm 0.0041)x + (0.1326 \pm 0.0559)$ ] with  $r^2 = 0.9982$ , calibration curve showed a linear range from 5–15  $\mu\text{g/mL}$  of diclofenac. The proposed method was found to be highly precise, having a relative standard deviation (CV) below 2.0 % in repeatability and intermediate precision studies. Accuracy: based on the average recovery of known amounts of drug in placebo was 98.07-101.97 % values that fall within the requirements set by USP and ANMAT (98.0-102.0 %). This method was found to be simple, rapid, specific, linear, reliable and robust, allowing the determination without preliminary extraction procedures.

**KEY WORDS:** Diclofenac, Quantification, Spectrophotometry, Tablets.

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