

## Spectrophotometric Determination of Nimesulide

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**A simple spectrophotometric method for the determination of Nimesulide based on the formation of blue coloured species  $\lambda$  max 600 nm) with Folinicocalteu reagent (F-C Reagent) is described.**

**N**IMESULIDE<sup>1</sup> (N-[4-nitro-2-phenoxyphenyl] methane sulfonamide) is used in pharmaceutical formulations for anti-inflammatory activity<sup>2</sup>. Folinicocalteu reagent<sup>3</sup> was utilized for spectrophotometric determination of drugs containing phenolic or amino groups<sup>4-7</sup>. Very few methods have been reported for the determination of Nimesulide which include HPLC and UV<sup>8</sup> techniques. There is one analytical report for the estimation of nimesulide using visible spectrophotometry<sup>9</sup>. In the present investigation the authors have developed a simple, sensitive spectrophotometric method.

The present method describes reaction of reduced nimesulide with F-C reagent (phosphomolybdotungstate) in the alkaline medium to develop a blue coloured species (reduced form of the reagent) which exhibits absorption maximum at 600 nm. 0.5N Aqueous solution of F-C reagent (Loba Chemie) and 1N sodium hydroxide were prepared in distilled water.

About 100mg of Nimesulide (pure or tablet forms) were accurately weighed and dissolved in 20ml of alcohol, treated with 10ml of 4<sub>N</sub> hydrochloric acid and 1.2g of zinc dust was added in portions. After standing for 1 hour at room temperature, the solution was filtered through cotton wool, the residue was washed with 3 x 10 ml portions alcohol and the total volume of filtrate was brought to 100 ml with distilled water. The final concentration of reduced Nimesulide was brought to 100  $\mu$ g/ml with distilled water.

To a series of 10 ml graduated test tubes aliquot samples of reduced nimesulide ranging from (0.25 -4.0 ml; (1 ml =100  $\mu$ g), sodium hydroxide (0.5 ml, 1N) and F-C

reagent (0.4 ml, 0.5 N) were added and kept aside for 10 min for complete colour development. Appropriate quantity of distilled water was added to all the tubes to make the volume to 10 ml they were centrifuged for 5 min. The absorbance of the blue coloured species was measured at 600 nm against reagent blank. The amount of nimesulide in sample solution was read from the calibration curve.

Beer's law limits (C = mg/10 ml), molar extinction coefficient (1.mole<sup>-1</sup> cm<sup>-1</sup>), Sandell's sensitivity ( $\mu$ g/cm<sup>2</sup>/0.001 absorbance unit), relative standard deviation (calculated from the eight measurements containing 3/4 of the amount of upper Beer's law limits of nimesulide), percent range of error (confidence limits with 0.05 and 0.01 level) were found to be 25-400  $\mu$ g,  $8.262 \times 10^3$ , 0.037, 1.82,  $\pm 1.52$  and  $\pm 2.25$  respectively. Regression equation (bC + a) were slope (b) is  $2.64 \times 10^{-2}$ , intercept (a) is  $0.03 \times 10^{-2}$  and correlation coefficient (r) 0.99993. Nimesulide in several samples (tablets) was determined by the proposed method and data is presented in table 1. The values obtained by the proposed method agreed within  $\pm 1.0\%$ .

To evaluate the validity and reproducibility of the method known amounts of pure drug were added to the previously analysed samples and the proposed method was followed and the results are shown in Table 1.

The usual excipients and other additives present in the formulations do not interfere. The method is simple, sensitive, reproducible and applicable to various pharmaceutical preparations containing nimesulide. The proposed method can be used in the routine determination of nimesulide in pharmaceutical preparations.

**TABLE 1**  
**Estimation of Nimesulide in Pharmaceutical Preparations**

Sample (Tablets)	Labelled amount(mg)	Amount obtained (mg)		%Recovery of the proposed method
		Proposed method	Reported method <sup>a</sup>	
1	100	98.93	99.34	98.28
2	100	99.30	98.02	98.96
3	100	99.84	99.67	99.52
4	100	100.47	99.01	99.69
5	100	99.41	98.25	98.83

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### Antiinflammatory Activity of Alcohol Extract of *Justicia procumbens* (Acanthaceae)

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**Alcohol (95%) extract of *Justicia procumbens* has been screened for *in vivo* antiinflammatory activity in albino rats. It revealed promising antiinflammatory activity at a dose of 100 mg/kg body weight.**

**F**OR many centuries, medical treatment has relied to a large extent on the use of plants. *Justicia procumbens* (Acanthaceae) is a common annual herb, world wide in distribution. The plant is slender, stems

diffuse, with many divaricate branches, rootings at the lower nodes, the flowers pale purple, glabrous or pubescent<sup>1</sup>. Various parts of the plant *Justicia procumbens* have been used in Ayurvedic medicine for a number of common

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