ANALYTICAL METHOD DEVELOPMENT AND VALIDATION FOR ESTIMATION OF METRONIDAZOLE AND MUPIROCIN IN BULK AND ITS PHARMACEUTICAL DOSAGE FORM

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ABSTRACT

A Simple, accurate, rapid, economical UV spectrophotometry methods namely First Order Derivative Spectroscopy and RP-HPLC methods have been developed and validated for estimation of Metronidazole and Mupirocin in combined Powder dosage form. In First Order Derivative Spectroscopy method the absorbance of the standard solutions have been taken at two wavelengths 242 nm (ZCP of MUPI) for Metronidazole and 263.6 nm (ZCP of METRO) for Mupirocin. Dilutions were prepared in Distilled Water. The methods were found to be linear in the concentration range of 2-10µg/ml and 4-20µg/ml for both the drugs. Assay was found to be 99.01 % and 97.68% for Metronidazole and Mupirocin respectively.

In RP-HPLC, method was carried out by isocratic technique on a reversed-phase: Hypersil BDS C18 (250mm X 4.6 mm i.d., 5 µm particle size) and UV detection at 277.58 nm with mobile phase containing a mixture of ACN: Buffer (potasium dihydrogen phosphate) and pH 6.3 (adjusted with Tri-ethyi Amine) at a flow rate of 1.0 ml/min. The average retention times for Metronidazole and Mupirocin were 3.2 and 7.7 min respectively. The calibration curves were linear in the concentration range of 2-10µg/ml and 4-20µg/ml for Metronidazole and Mupirocin respectively. Correlation co-efficient

were found to be 0.9978 and 0.9981 for Metronidazole and Mupirocin respectively. Mean assay was found to be 100.55% and 101.83% for Metronidazole and Mupirocin respectively.

KEYWORDS: Metronidazole and Mupirocin, Derivative Spectroscopy method, RP-HPLC