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## **SPECTROPHOTOMETRIC DETERMINATION ORNIDAZOLE IN AN INFUSION SOLUTION**

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Ornidazole, chemically 1-chloro-3-(2-methyl-5-nitro-1H-imidazol-1-yl) propan-2-ol, with molecular formula  $C_7H_{10}N_3O_3Cl$  is an antimicrobial agent [1]. Ornidazole is used in the treatment of amoebiasis and other protozoal diseases. It is used in treatment of amoebiasis, giardiasis, trichomoniasis etc. This drug is under the category anthelmintics [2]. Ornidazole is a 5-nitroimidazole derivative. It is converted to reduction products that interact with DNA to cause destruction of helical DNA structure and strand leading to a protein synthesis inhibition and cell death in susceptible organisms [3].

Literature review revealed that few methods are available for the determination of ornidazole in bulk and dosage form based on spectrophotometry, HPLC and HPTLC.

The main objective was to develop a simple, accurate, precise and sensitive spectrophotometric method for determination of Ornidazole in an infusion solution.

The object of the study was selected industrial drug production "Ornidazole, 0.5% solution for infusions", manufactured by PJSC "Infusion", Ukraine.

The method is based upon reduction of ornidazole and reaction of reduced ornidazole with 0,1 M sodium hydroxide solution to form yellow coloured product. For these conditions, it is determined that a stable colored product is formed after 30 minutes of the reaction. The colored complex obeyed Beer's law in the concentration range from  $2.0 \cdot 10^{-4}$  % to  $2.0 \cdot 10^{-3}$  % at  $\lambda_{max}$  of 318 nm.

The calculated specific absorption rate in the experimental conditions of a solution of ornidazole in 0.1 M sodium hydroxide solution is  $372 \pm 2.77$ . That's why the proposed method can be used for identification of ornidazole by the standard method and by the specific absorption rate.

Approbation of the method was carried out on the drug "Ornidazole, solution for infusion of 0.5%". The result was a content of  $5.03 \pm 0.0083$  mg / ml, which corresponds to the content stated on the package and the requirements of regulatory authorities.

Thus, an easy-to-perform method for the identification and quantification of ornidazole in infusion solution has been proposed and may be recommended for routine analysis in laboratories of different equipment levels.

### **References:**

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2. Grewal A.S., Bhardwaj S.K., Patro S.K., Kanungo S.K. Visible Spectrophotometric Estimation of Ornidazole in Pure and Pharmaceutical Formulation. International Journal of ChemTech Research. 2012, Vol.4, № 3. P. 1044-1048.
3. Tripathi K.D., Essentials of Medical Pharmacology, Jaypee Brothers Medical Publishers pvt ltd, New Delhi, 2008, 800.