

A Modified and Credible Methods to Estimate Nitrofurantoin In the Standard of Substances and Pharmaceutical Dosage

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ABSTRACT

For identifying the nitrofurantoin drug, the four selective, sensitive and simple methods were developed. And these methods are then proved as well as validated in our particular research work. These methods are dependent of the nitrofurantoin reactions, performed by utilizing ZN/Cl, as well as iron mixture (II) and neutral medium is used for ferric chloride reduction through this drug along with 1, method A- 10- phenanthroline or 2, method B- bisperdyl or blue chromogen is formed when this particular drug binds with the oxidized ferric chloride and potassium ferritic cyanide reagent (method D). A colourful product is produced with the ninhydrin and nitrofurantoin reagent interaction and also method D is also dependent on this. By using method A, B, C and D the measurement of resulted red chromosomes is found to 500nm, 515nm, 735nm, and 575nm respectively. Method A, B, C and D uses the concentration ranges of 0.20-8.0 mg/ml 0.25-40 mg/ml, 0.50-30 mg/ml and 0.50-50 mg/ml respectively and in such optimal conditions Bers law is applied along with molar's absorption values are also estimated. The statistical comparability of the suggested methods resulted with all those acquired by the reference technique which proved outstanding agreement as well as also shown there does not exist any interference through typical excipients in pharmaceutical formulations.

Keywords: Chelating agents, Ferric chloride, Nitrofurination drug.

INTRODUCTION

One of the nitrofuran's drug derivative namely nitrofurantoin (NTF) is essential during the disease of urinary area and possesses a chemical structure namely (1-((5-nitro-2-furfurylidene)-1-amino) hydantoin) and is presented in Figure 1. Additionally, a few gram-positive organisms like corynebacterium, viridians streptococci, group D streptococci, S. agalactiae, enterococcus faecalis, S. saprophyticus, S. epidermidis, and S. aureus induces activity in NTF.

The activity spectrum for gram negative organisms that are shigella, salmonella, Neisseria, Enterobacter, and E. coli, [1,2]. Furthermore, from the bacterial resistance development this drug is highly stable

and this characteristic is result of the mechanisms work multiplicity [3].

In addition to, it would once deal with bladder infections through antibiotic that is provided through the oral cavity. Therefore, it is essential for preventing as well as treating the infections of urinary tract infection by opposing the bacteria's growth. Although, in case of kidney infections the drug is inactive [4].

In the pure drug and pharmaceutical preparation the nitrofurantoin evaluation is registered by some of the analytical techniques. Furthermore, the drug can be estimated in the form of tablet dosage through the HPLC technique, additionally, spectrophotometric method verified that evaluation of the nitrofurantoin electroanalytical technique was posted to drug determination [5,6].