



Newer RP-HPLC method development and validation of cefixime and linezolid in bulk drugs and combined dosage form

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Abstract

Newer RP-HPLC method was developed for simultaneous determination of cefixime (CEFI) and linezolid (LINZ) in bulk drugs and combined dosage form. Mobile phase consisting of mixture of methanol and water (pH 3.2 adjusted with 1% O-phosphoric acid) in the ratio 40: 60 at flow rate of 1.0 ml/min using C18 Grace (250mmX 4.6mm) column at 252 nm. The retention time of CEFI and LINZ was found to be 4.81 min and 7.16 min, respectively. The linearity range for CEFI with LINZ observed was 1-5 µg/ml and 3-15 µg/ml, respectively. Method was validated as per ICH guidelines. Validation parameters studied were linearity and range, recovery study, precision, LOD, LOQ and robustness. Statistical data obtained was found to satisfactorily.

Keywords: RP-HPLC, Cefixime, Linezolid, Validation

Introduction

Cefixime (CEFI) is an oral third generation cephalosporin class of antibiotic. Chemically it is (6R,7R)-7-[(2Z)-2-(2-amino-1,3-thiazol-4-yl)-2-[carboxymethoxy]imino]acetamido]-3-ethenyl-8-oxo-5-thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid (Fig. 1).¹ It is used in the treatment of susceptible infections including gonorrhoea, otitis media, pharyngitis, lower respiratory-tract infections such as bronchitis, and urinary-tract infections.²⁻³ It is official in Indian Pharmacopoeia.⁴

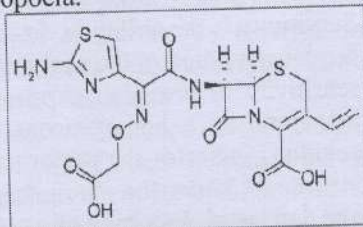


Fig. 1 Chemical structure of cefixime

Linezolid (LINZ) is first of the oxazolidinone class of antibiotic drug.⁵ Chemically it is N-[[[(5S)-3-[3-fluoro-4-(morpholin-4-yl)phenyl]-2-oxo-1,3-oxazolidin-5-yl]methyl]acetamide (Fig. 2). It is useful as Antibacterial Agents.⁶⁻⁷ It is official in British Pharmacopoeia.⁸

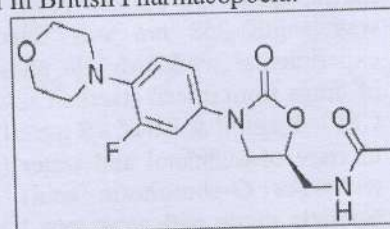


Fig. 2 Chemical structure of linezolid

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