1.Introduction

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Loratadine (Ethyl-4-(8-chloro-5,6-dihydro-11H-benzo[5,6]cyclohepta[1,2-b]pyridin-11-ylide)-1-piperdine-1-carboxylate) is a non-sedative histamine H_1 receptor antagonist with antiallergic properties, devoid of anticholinergic activity. It is rapidly absorbed from the gastro-intestinal tract after oral administration, peak plasma concentration being attained in about an hour. Loratadine undergoes extensive metabolism. The major metabolite, decarboxyloratadine has potent histamine-H_1 blocking activity. [15,16]

Radioimmunoassay, High Performance Liquid Chromatography (HPLC) and Gas Liquid Chromatography (GLC), with detection limit of 0.3 μg/L, 0.6 μg/L and 0.1 μg/L respectively have been used to quantitate Loratadine and its chief metabolite, decarboethoxy-loratadine in plasma. [2,13,14]

Sensitive liquid chromatography-tandem mass spectrometry method for the determination of loratadine and its major active metabolite, decarboethoxy-loratadine in human plasma was reported recently. [18]

Polarographic determination of Loratadine assay in pharmaceutical preparations was reported. Nitration procedure is required in order to obtain nitro-loratadine derivative which has been identified as 4-(8-chloro-7-nitro-5,6-dihydro-11*H*-benzo-[5,6]-cyclohepta-[1,2-*b*]-pyridin-11-ylidene)-1-piperidine carboxylic acid ethyl ester to undergo electrochemical reduction of the nitro group using polarography and cyclic voltammetry.[1]

In this study a potentiometric non-aqueous titration method was developed and validated with respect to precision, accuracy, linearity and ruggedness.

This method is used to assay pure Loratadine active drug substance.

A reverse-phase high performace liquid chromatography (RP-HPLC) method was developed to carry out the manufacturing impurity testing of Loratadine active drug substance. The RP-

HPLC method developed was also suitable to carry out the assay and related substance testing simultaneously in Loratadine pharmaceutical preparation.

The RP-HPLC method was validated with respect to specificity, linearity, accuracy, precision, robustness, stability of the test solution and ruggedness. The minimum detection limit and minimum quantitation limit were also determined.

The practical advantage of non-aqueous titration of Loratadine is the rapid determination as it does not required derivatisation as in the polarographic method mentioned above. It is suitable for the Loratadine active drug substance assay determination.

The HPLC method developed is used to determine Loratadine assay and its related substance simultaneously in its pharmaceutical preparation.

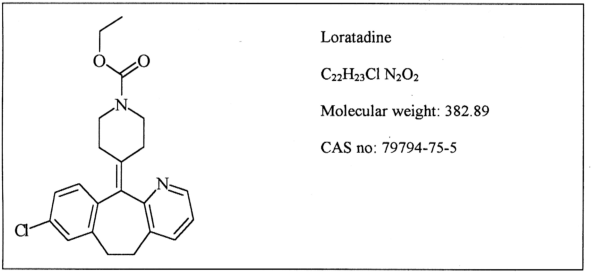

Figure 1: Structure of Loratadine