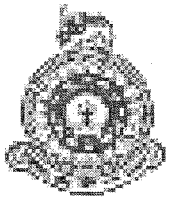

# Development of high performance liquid chromatography assay methods for cetirizine and loratadine in syrups

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# Abstract

Cetirizine and loratadine are second generation nonsedating antihistamine drugs used to relieve temporarily the symptoms of hay fever and urticaria. They are also used to treat itching and redness caused by hives. Cetirizine and loratadine are marketed for their non-sedating properties.

The development and validation of high performance liquid chromatographic (HPLC) methods for the determination of cetirizine and loratadine in oral formulations are described. The liquid chromatographic system, used in the study, consisted of an Agilent technologies 1200 series instrument.

A system was devised using a spherisorb silica column (10 μm, 4 x 250 mm) and the elution was achieved isocratically with a mobile phase of methanol: acetonitrile: water in the ratio of 20:20:60 v/v/v at room temperature for cetirizine. The response was monitored at 229 nm using the variable wavelength detector. Solutions passed through the column at a flow rate of 1.5 ml/min. Concentration of cetirizine obtained by this method was 4.93 mg/5 ml.

An isocratic HPLC analysis was performed on a reversed-phase C18 column (10 μm, 30 cm x 3.9 mm) with the mobile phase containing sodium dihydrogen orthophosphate monohydrate: methanol in the ratio of 20:80 v/v was used to estimate loratadine. Solutions passed through the column at 25 $^{0}$C at a flow rate of 2.0 ml/min. Analytes were detected using variable wavelength detector at 225 nm. Concentration of loratadine determined by this method was 4.89 mg/5 ml

The retention times were 4.49 and 4.28 min for cetirizine and loratadine, respectively. The relative standard deviation (RSD) values for method repeatability tests were 1.78 and 0.84% for cetirizine and loratadine, respectively. The RSD values for system repeatability tests were 0.64 and 0.02 % for cetirizine and loratadine, respectively.