ABSTRACT
Pharmaceutical drug products play a major role in human lives which help in curing the various diseases. Nowadays, many of the drugs are synthesized oftenly shows many therapeutic effect in their pharmaceutical formulations. At finally the biologically active substances are formulated into different formulations such as tablets, capsules, suspensions, ointments and injectables. These drugs deliver the drugs and shows the therapeutic effect. At end the product should ensure the quality can be achieved by various analytical techniques. The aim of this study mainly focuses on a powerful analytical technique such as chromatography method as HPLC shows wide application. By literature search it needs to develop new, simple and reliable analytical method development and validations.

KEYWORDS: Loroxamic, Thiocolchicoside, HPLC, Validation.

1. REVIEW ARTICLE OF ARTICLES
Shekhar M. Bhavsar., et al., (2010) Developed simple, sensitive and rapid RP-HPLC method for simultaneous determination Loroxamic and Thiocolchicoside by using mobile phase of Buffer (5.7606 gm Ammonium Dihydrogen Phosphate in2000mL of milli-Q water, adjust pH 7.3 with Tri Ethyl Amine): Methanol 45:55, flow rate at 1.5 mL/min, detection at 290 nm.

A. Suganthi., et al., (2012) Developed a simple, sensitive and rapid RP-HPLC method for simultaneous determination Loroxamic and Thiocolchicoside by using mobile phase 10mM
ammonium acetate: methanol (50:50), pH7 adjusted with 1% triethyl amine. And subjected to forced degradation to alkali, acids conditions.

**Harikiran. O.v., et al., (2013)** Developed a simple, sensitive and rapid RP-HPLC method for simultaneous determination Lornoxicam and Thiocolchicoside by C8 column (X terra, 4.6 x 250mm, 5m, mobile phase Buffer (2.5mg of Sodium di hydrogen ortho phosphate in 1000 ml HPLC water, adjust pH 6.8 with sodium hydroxide) Acetonitrile of 35% and 65% flow rate 1.0 mL/min detection at 298 nm.

**Madhusmita Sahoo., et al., (2011)** Developed a simple, sensitive and rapid RP-HPTLC method for simultaneous determination Lornoxicam and Thiocolchicoside by using mobile phase methanol: chloro form: water (9.6:0.2:0.2v/v/v) detected at 377 nm.

**Pankaj kumar., et al., (2012)** Developed a simple, sensitive rapid RP-HPLC method for simultaneous determination Lornoxicam and Thiocolchicoside in human plasma, mobile phase Phosphate buffer (pH 6.8) and Acetonitrile (70:30 v/v) in isocratic flow, flow rate 1 ml/min, Phenomenex Luna S-C18 column (5μm, 250mm X 4.60mm i.d.) with PDA detection at 295 nm.

**Priyanka A Bhatt., et al., (2013)** Developed a quantitative analysis of Lornoxicam by Chromatographic separation Qualisil BDS C18 column (250×4.6 mm i.d.,5μ particle size) 5mM ammonium acetate: acetonitrile (65:35 %v/v), pH adjusted 5 with glacial acetic acid. Flow rate was 1 ml/min and detection at 290 nm using PDA detector.

**Prajapati Arun M., et al., (2014)** Developed a method by reverse phase C18 column (Phenomenex C18, 250 mm × 4.6 mm, 5μm), mobile phase phosphate buffer (pH-3.5): acetonitrile (65:35, v/v) with a flow rate of 1 ml/min with Photo Diode Array detector at 275 nm.

**Desai Chandni H., et al., (2015)** Developed a simple HPLC method for Thiocolchicoside in Capsule dosage forms. Thermo Hypersil Silica 5μ, (250mm x 4.6mm).Mobile phase a mixture of N-Heptane: Methanol: Chloroform: Acetic Acid (70: 20: 10: 0.2 %v/v). The Flow rate was 1ml/min with UV Detection at 360 nm.

**Mahesh Attimarad., et al., (2010)** Developed a simple, rapid, specific and precise HPLC method for lornoxicam separation of the drug by using eclipse C18 column (150 mm x 4.6
mm, 5μm) as stationary phase and mobile phase is methanol: 0.1% formic acid in water (80:20 v/v), flow rate of 0.8 ml/ min and UV detection at 381 nm.

**B. M. Solanki., et al., (2012)** Developed a method for Lornoxicam. Mobile phase consisting of acetonitrile: phosphate buffer (40:60) adjusted to pH 6.0 with H₃PO₄ on a C18 (ODS 250 × 4.6 mm) flow rate of 1.0 ml/min and detection at 381 nm.

**M. T. Harde., et al., (2012)** Developed UV Spectrophotometric methods for simultaneous estimation of Thiocolchicoside and Dexketoprofen in bulk and in tablet dosage form, detected at 237nm.

**Gandhi Santosh., et al., (2010)** Developed and validated Thin layer chromatographic methods for simultaneous estimation of diclofenac sodium and Thiocolchicoside by using precoated silica gel 60 F254 separation bands were detected at 254nm.

**Lakshmi sivasubramanian., et al., (2010)** Developed a new simple, accurate and economic spectrophotometric methods in UV/VIS region for the determination of paracetamol and lornoxicam methods were validated for linearity, accuracy and precision.

**Kulandaivelu Karunakaran., et al., (2014)** Developed a new simultaneous determination of paracetamol and lornoxicam by RP- HPLC. Using a C18 column, acetonitrile and 0.02 M potassium dihydrogen phosphate in the ratio of 35:65 (v/v) as the mobile phase, flow rate of 1.0 mL/min.

**Veena G. Kulkarni., et al., (2011)** Developed a simple, accurate and precise method by RP-HPLC for Paracetamol and Lornoxicam. By using Jasco HPLC with Grace C18 column (150 mm×4.6 mm i.d.) and UV/VIS detector using Acetonitrile: 0.04 mM Potassium hydrogen phosphate buffer in the ratio of (60:40, v/v) flow rate of 1.0 ml/min and detection at 270 nm.

**Firoz Khan., et al., (2011)** Developed and validated for lornoxicam by second order derivative shows λmax at 257.2 nm.

**Santosh Kumar M., et al., (2014)** Developed RP-HPLC for Etoricoxib and Thiocolchicoside Hypersil BDS C18(250 x 4.6 mm, 5μ.) with mobile phase mixture of Buffer and Acetonitrile 60:40, pH adjusted to 3.1, flow rate at 1.2 ml/min. UV detected at 258 nm.

V.V. Chopade., et al., (2014) Developed a chemicals stress degradation Studies for lornoxicam in self emulsifying drug by HPTLC, precoated aluminium plates with silica gel 60F-254 as the stationary phase. The solvent system consisted of dichloromethane: ethyl acetate: glacial acetic acid (9.5:0.5:0.1 v/v/v).

G. Abirami., et al., (2014) Developed a new simple accurate RP-HPLC method for determination of Thiocolchicoside and Ketoprofen in bulk and tablet dosage form, by using C18 column (150 mm x 4.6 mm; 5μ) mobile phase of Acetonitrile and Water in a ratio of 60:40 v/v at a flow rate of 1.0 ml/min. The detected at 300 nm.


Shivani A. Trivedia., et al., (2015) Developed a RP-HPLC method for thiocolchicoside and dexketoprofen trometamol in combined dosage form. Using a Agilent Eclipse C-8 column (5 μm, 250×4.6 mm) mobile phase acetonitrile: 0.1% o-phosphoric acid in water (41.9:58.1; pH 2.6). The flow rate 1 ml/min with UV detection at 254 nm.


Jyoti Shrivastav., et al., (2011) Developed a HPTLC method for the simultaneous estimation of thiocolchicoside and diclofenac potassium. Chromatographic separation was performed on silica gel 60 F254 as the stationary phase and the toluene: acetone: methanol: formic acid (5:2:2:0.01 v/v/v/v) as mobile phase.
REFERENCES


