CHAPTER-2-
LITERATURES REVIEW

N. Khaleel Sk., et al., (2015) were represents a new analytical method for Abacaveir, Lamivdine and Dolutagravir in bulks and pharmaceutical dosages form by using Inretsil ODS 250.0×4.60 mm, 5.0µm particles sizes coloumn, mobile phase consisteing of ph.3 Phosphates buffer:Acetoniterile: Methanol (50.0:20.0:30. 0%.v/v).
The flow of rates shows 1.0ml per minu and the clueants which are monitored at the 257 nm with the help of PDA detectaor.
And the retention time of Lamivdine, Abacaveir and Dolutagravir are determined at 2.169, 2.676 and 6.367.
From the above data the recovery of Lamivdine, Abacavir and Dolutegravir are found to be 98.01 -101.5 %, 99.20 – 101.67 % and 98.53 - 102.15 %.
Calibrtion curve found betweens peaks areas against concentratation is linear with the range found to be 15.0 -90.0 µg per ml for Lamivdine, 30.0-180.0 µg per ml for Abacvir and 2.50-15.0 µg per ml for Dolutgravir.
And the method is undergoes the degration studies, validated as per ICH guideline.

Chantelle Bennetto-Hood., et al.,(2015) were reported new analytical method for Dolutegravir in Human Plasma by HPLC-MS/MS Method and also the assest the clinical phamacokinatics studies,by using XBridge (C18, 2.1 × 50 mm column), 60.0:40.0 acetonitril, water moblie phases which is pocess about 0.1 % formic acid.
This process done by using a 20 microliter of human plasema which is labeled as isotope of doultegaer.
Detecation of an analyte by using internal standard is determined by with ESI positives ionizations tandems mass spectrometys.
Initially the precousor is moniterd fromtheir limets. Assay range varies from 5.0 to 10,000 ng per ml, and sum of coefficient is determine by (r, mean ± Stand deva) of 0.996 ± 0.003.And this method is validated.
The systems which is provided the data after compleataion of this works is successful can be applie for the further works
G. Srihari., et al.,(2011) proposed a simple, sensitive, accurate and economic methods A and B have been developed for the quantitaetive estimation of abacavir sulfate and its formulations. In Method A the primary amine group undergoes diazotization abacavir with sodium nitrate and hydrochloric acid by coupling reaction with resorcinol which gives orange colored chromogen with a characteristic absorption is maximum at 450 nm. In method B abacavir sulfate reacts with para dimethyl amino benzaldehyde in methanolic soloution in acidic condition producing Schiff’s base having absorption heighest in the 455 nm. Beer’s law will obeyed in concentrations ranging from 50-250 µg/ml for both methods.

In this process it involves the prepearation of stanerd soloutions as follows to the 100 micrograms of the components are taken in neat voloumateric flask in which containg a 25 microlit of water which is further make to level upto 100 it is know as stockes soloutions and it is further diuted with water know as working standerd soloution.

This spectrophotremetry technique are the likes even now a days there are used in even in many laboratatries ,hosiptails and even in many of the pharmecutical industries also due because of less cost.

Anil yadav Nodagala., et al., (2013) proposed a method for parllely determination of Abacavir Sulphate, and by Lamivudine in a Tablet dosages form using Inertsils ODS (150.0×4.60, 5.0µm) by using UVIs detectaion which at 254 nm, moblie phase constitution is allow to mixed phosphates buffar (pH 4.0) and Acetonitrile with the flow of rate at the 1ml per min and the procedure is validate as per ICH and USP guidelines as of linearaity, acurecy, precission, robustness, ruggedness, Specificfity, limit of detectaion and limit of quantiflfication range off 20.0-120.0µg per ml & 10.0 -60.0 µg per ml respektively. The limit of detectaion has been determine at 0.049 ,0.028 for abacavir by lamivudine respektively.

And the quantiffication is determine at the 0.01840 µg per ml and 0.0150 µg per ml for abacavir and lamivudine respectively.

This process inovles the preporations of stocks soloutions as 117 micrograms of abacaver sulphate and the 50 micrograms of lamivdine which
are been passed into a 100 ml of volumetric flask and to this dissolve about the 50 microliter of mobile of phases and it is make up to the line. From which further take away 5 microliter to the 50 microliter of the flasks which make to the level.

Accuracy
Is done by computing the recovery of sample by the standard addition process. The recovery of the process is done by three series of injections at variable conc.

Precision
It will be determine by the samples taking in within a days and between two mutuals days. The result is displayed in terms of relative standard deviation.

Rajendran Vijayalakshmi., et al.,(2013) were reported a new analytical procedures for the simultaneous resolution of Lamivudine and also Abacvir Sulphate a new reverse phase chromatography in tablets formulations, By using Phenomenex C18 (250.0 x 3.60 mm, 4.0 µm particles sizes) coloumn, mobile phases and the phosphate buffer (ph 7.5) and the methanol is at equimolar ratio. And flow of rate at the 1.0 ml per minu and detection is determine at the 216 nm, retentions times of the lamivudine and also abacvir were founded at the 3.157 and 6.637 min, linearity is determined at 80-280 µg per mls and 75-450 µg/ml for lamivudine and abacvir, which is further ratify for the parameters likes accuracy, precision, robustness follows. and process is ratify as per guidelines.

Accuracy
Is done by computing the recovery of sample by the standard addition process. The recovery of the process is done by three series of injections at variable conc.

Precision
It will be determine by the samples taking in within a days and between two mutuals days. The result is displayed in terms of relative standard deviation.

G. Sravan Kumar Reddy., et al.,(2014) were reported a new analytical method for lamivudine, abacavir & zidovudine by using UPLC, by using
Symmetry C18 (2.1 x 100mm, 1.7m, Make: BEH) or analogue to an Isocratic Modes.
The mobile phase consists of Phosphate Buffer (60%) [pH3.0] & Methanol (40%) [UPLC Grades] And the flow of rate is absorbed at the 0.25 ml/min. The flow of rate at 0.25 ml/min.
The wavelength is chosen for the detection as at 280 nm, an time run of 3min. Lamivudine, Abacavir and Zidovudine were 1.019 min., 1.271 min. & 1.617 min are the retention times.
The method is validated and the range is found to be Abacavir, Lamivudine and Zidovudine are determine at 0.002µg/ml, 0.003µg/ml, & 0.005µg/ml. This involves the preparation of stockes and the samples solutions such as take the exactly amount of Abacavir, Lamivudine and Zidovudine in to a 10 microliter of volumetric flasks into this mix about 7 microliter solvvent.and this made to the level with a solvent.
From which further taken off about 0.4 microliter which is mixed to the flask and it is made to the volume by the solvent.
And during the preparation of the sample solutions re been done as follows by taking a mass of 163.5 grams Abacavir, Lamivudine and Zidovudine taken into a 1000 microliter of the volumetric flask to this 70 microliter is added the solvents which is allow to soincat from which 0.17 microliter is take out in a 10 microliterof flask added to the solvents. And make it the five injected volumes.

Lenkalapally Matsyagiri., et al.,(2013) proposed a simple and highly sensitive UV-Spectrophotometric method for Abacavir sulphate in different solvents in different absorption spectra of maximum absorbance at pH 6.8 PBS, pH 1.2, and distilled water were 219.82 nm, 296.21 nm and 216.08 nm. Preparations of calibration curve as follows form the selected wavelengths of varies concentrateins are been identified and allow to prepare the stocks and the sample soloutions.which are scan over the spectrum from the levels of 400-200.

Accuracy Is done by computing the recovery of sample by the standard addition process. The recovery of the process is done by three series of injections at variable conc.
Precission
It will be determine by the samples taking in within a days and between two mutuals days.
The result is displayed in terms of relative standard deviation

M. Alagar Raja., et al.,(2012) determine a best, selective spectrophotometric and RP-HPLC process for Abacavir sulfate shows good outcome as a accuracy, precision and the lineariity from the range of 5.0-25 and 10-120 µg per ml,
The lod for the tablet dosage forms are 3µg per ml and 10 µg per ml.
The accuracy, precision and linearity from the ranges of 5.0-25 and 10-120 µg per ml, for Abacvir sulfate.
The limits of detection is determine at the 3µg per ml and 10 µg per ml, the limit of quantification found at 5µg per ml and 30µg per ml.
The relative std deviation is found to be 0.5 and the recovery is about the 84% to 113%.

Preporations of standard solutions 100milligram of abacavir is disloved in a 1000 microliter of volumetric flaseks and made to the mark by using the similar solovant.which is again dilute with a 100 microliter of water and acetoniterlie.
From which 5 microliter are taken in aflaseks which is again diluted with solovants allow to scanned for the absorbences.

Accuracy
Is done by computing the recovery of sample by the standerd addition process.
The recovery of the process is done by three series of injections at variable conc.Precission It will be determine by the samples taking in within a days and between two mutuals days.
The result is displayed in terms of relative standard deviation

Will be the moblie phase. UVIs determinations are been done at the 258 nm.
The process is further examined for the in terms of linearity, accuracy, precision, specificity and sensitivity as per ICH guidelines.

The retention time is absorb at the 3.2 and 4.1 mins for the lamivudine and tenofovir disoproxil fumarate. Further the flow of rate is done at 1 ml per minu. the range of linearity is absorb at the conc over the range of 2 –12 µg per ml for both lamivudine and tenofoir disoprxil fumarate. The LOD and LOQ values are determine at 0.099 and 0.299 g per ml for lamivudine and 0.0328 and 0.0994 g mL-1 for tenofovir disoproxil fumarate.

And the preparations of samples solutions are 20 tablets are taken and measure exactly and their averages weigts are been taken.

which are allow to crush in a mortar from wich 25 gms of sample takens as equivalants its is transfers into 25 microliter of voloumatric flaseks it is disloved into 20 microliter of methanol which is shakan for the 5 mimut, and after it is allow to sonicates for the periods of 20 minutes.

This solution is passed through filter paper under vaccume pressure.

Accuracy
Is done by computing the recovery of sample by the standerd adition process. The recovery of the process is done by three series of injections at variable conc.

Precision
It will be determine by the samples taking in within a days and between two mutuals days.

The result is displayed in terms of relteive standerd devation

Pradeep Kumar., et al., (2012) were reported a fast, scientific, accurate, specific and best RP-HPLC- method for Abacavir in a bulk and the tablets dosages forms. By using HPLC- 10-AT -SHIMADZU- SPD-10-A, using Phenomenex - Luna RP-18(2),250.0X4.60mm, 5.0 µm coloumn, water: Acetonitrile 80:20 %/(v/v) the flow of rate is at 1.0ml per min detecated at the 285 nm with the help of a UVIs detecator. The retention time of Abacvir was 7.71 min.

Linearity range of 100-2800 ng ml. Limit of detecation was founded to be 21.04 ng per ml and the quantification limeit is 63.77 ng per ml. this process is validated and accuracy for propoesed process was examined by the recovry studies and founded to be 99.23 to 100.61.
The accuracy is done by measuring the true value of the sample. Accuracy is determined by the recovery studies prepared from the standard and samples solutions, and the label claims. From which 0.4 ml of standard solution of 10 microliter is added in each volumetric flask. And the amounts of recovery found with this has no inferences.

Precision
It will be determine by the samples taking in within a days and between two mutuals days. The result is displayed in terms of relative standard deviation.

D. Anantha Kumar., et al., (2010) developed simple, accurate and reproducible RP-HPLC method for lamivudine, zidovudine & abacavir in tablet dosage forms. By using HiQ SilC 18 V column, mobile phase 0.01 M potassium dihydrogen ortho-phosphate (pH 3.0) and methanol (55:45 v-v) with the flow of rate is 0.8 ml per min. Detection is absorb at 272 nm by using the stavudine as the internal standard.

And the times of retention for various are absorb at different times are lamivudine, abacavir and zidovudine are 3.8, 6.3, 8.1 min respectively.

Linearity of its found at the range of 5-250 µg per ml and further both zidovudine and abacavir and 5-140 µg per ml is for lamivudine.

Preparation of the internal standard solution as follows from the stocks solutions 25 grams of each one is allow to dissolve into a 25 ml of volumetric flask by using a solvent methanol and which is allow to further sonicates for period of 15 minutes.

From above the solution the stockles solution and the samples solutions are been prepared.

Calibration curves is done by different solution are been placed in to a 10 ml of volumetric flasks 5-300 microliter of conc renge are been prepared for the individual components. Six multiple solution are been prepared from the range of the concentration, and finally the internal standard solution is added to make a solution of 20 microliter. At finall the graph is plot interneal standard area of a peak and the concentration.

Preparation of various solutions are such as internal standard as by taking 10mg of sample drug into 10ml of water such that the ultimate concentration will become as 1mg concentration. The prepared solution is allowed to kept in cool conditions and been protected from sunlight. Dilutions are been diluted with mobile phases which is again diluted with internal standard solution.

In order to prepare the sample solution initially take 20 tablets which is allow to crush in a motor until it become powdered. From which 50mg of drug is taken in volumetric flasks and to which is further 25ml of water is added such that it is shake for 20 minutes. The triplicates of solution are taken allow to measure it.

Accuracy
Is done by computing the recovery of sample by the standard addition process. The recovery of the process is done by three series of injections at variable conc.

Precision
It will be determined by the samples taking in within a days and between two mutuals days. The result is displayed in terms of relative standard deviation.

M. Srinivasa Rao., et al., (2011) were reported two simple, accurate, rapid process for A and B which is determined by the spectrophotometric for abacvir sulfete. Further, the compounds are diazatised with nitroes acid follows by coupling reaction with Phloroglucinols and Resorcinol. $\lambda_{\text{max}}$ is found at 520nm $5.50 \times 10^4$ l.mol for B 600nm and $4.19 \times 10^4$ l.mol cm follows. The colour which developed are stable for 10 hours with a limit for 20 mins.

This process involve preparation of standard solution 100 grams of abacavir is taken in 100ml of volumetric flasks which is further made to the level with water.

Process for the assay for abacavir initially 2 tablets are weight and allow to become its powdered which is allow to passed into a 100ml of volumetric flask to this 5ml of methanol is added allow for stand 10 minutes and then it is make upto the level with acetonitrelie for the yield of the concentration in their linear range.

T. Sudha., et al., (2010) developeds and validats for the estimaetion of Lamivudine and Abacvir respectively, separation by a 5µm C18 column.
(150.0x4.60 mmid) in isocratic mode, with the mobile phase of methanol: waters (70:30.0, ) are used.
And flow of rate is of 1.4 ml per min and the eluents is of monitored at of 275nm. Lamivudine (Rt= 2.5490 min) and Abacaveir (Rt= 3.499 min) the Linearity of Lamivdine and Abacvir is founded at the range of 2 -12 µg per ml.
And the percentage recoveries for Lamivdine and Abacvir determined at the 99.18 ±101.00% and 99.83±100.83%, and further limits of detecation are absorba limit of 0.0268 and 0.0049 for Lama and Abac follows. Limit of quantificetion was founded to be 0.184 and 0.150

Venkata Mahesh R., et al.,(2011) developed a spectrophotometric for abacvir sulphete Which is based upon the diazo reaction s for both bulk and tablet dosages is carried in the presences of nitrous ascid allow to coupling with beta napthols which readily forms a red colour which shows the max absorbencies at 574 nm as its follows the beers law at the concentration range of 5-20 µg per ml.
Preporation of standerd soloution of abacavr soloutions is by taking a pure sample into a voloumateric flask of 100 ml contain of 50 gm of sample to which add 50ml of methanol in to it.
Preporation of sample soloution of abacavr 20 tablets each of this contain 300mg of drug from which equivalent weights of sample is taken i,e 50mg taken into 50ml of voloumateric flask allowed to add 25ml of methanol allow to sonicate for period of 5 mn,and after the soloution is passed through vacume pump lastely made to levelmark with distilled water.

T. Raja et al., (2011) developed and validated of abacavir, lamivudine and zidovudine by HPLC C18 column with UV detection at 270nm. The mobile phaswater: methanol (70: 30v/v) with 0.1 % potassium dihydrogen phosphate pH+ 3.2 it is adjust with the ortho phosphoric ascid addition of stavudine as internal standard. And method is validated as per ICH guidelines.
Preporation of stockes soloution as abacavr, lamivdine and zidovudine are take exactly of 100mg into a 1ooml of voloumateric flaseks and diluents is added to this allowed for sonicate for 15 minutes which is consists of 70:30: percents of water and methanaol.
Preporation of standerd soloution by abacavr 300, lamivdine 300 and zidovudine 150 mls are taken. And the internel standerd soloution are made 20ml are stored at temperature of 20.

In this calibration curveis done by taking stockes soloutions are measure xactly into a 10 ml of voloumateric flaskes.to which internal standerd soloution are added at 20 microlitr.a standerd graph is obtained by ploteing agaist the internal standerd with concenterneration.

V. Phani Kuma., et al., (2011) were reported a new analytical method for Saquinavir moblie phase of 0.01 M Potasseium di hydrogen phosphahate: acetoniterile: methanol: 1% ortho-phosphoric ascid 20.0:20.0:40.0:20.0 at a flo rate at 1.0ml per min and UVis detectaion at 242nm . Linaerity founded at the the range of 0.1 mg per ml to 0.5 mg per ml. limite of detecation 25 nano gram method was found to be accurate, precisse for analysis.

Here dertermin the linaerity process initially the 5 varients samples soloutions are been prepared from the levels of 0.1 to 0.5mg.and the chromatograph is recorded for the peaks, which shows the releations across the peaks area and conceneration is determined.

Amala mateti., et al.,(2012) were reported a simple, sensitive and accurate for Saquinavir by using UV-Visible SpectrophotometerT60 (model), $\lambda$ max at 240nm by using 20% methanol of ±5.0nm with quartz cells of 1cm path length molar absorptivity was found to be $3.436 \times 10^4$mol$^{-1}$ cm$^{-1}$ in 20 % Methanol.

Method is ICH guidelines and USP. The Detectation lemit and quantitation limit are determine as 0.138 $\mu$g per ml and 0.420 $\mu$g per ml in 20% Methanol respectively.

Preporation of stockes soloutions measure the sample exactly into a 100ml of volumateric flaseks contaeing of 20 percents of methanol in it.from which the 2.5ml of the soloution is taken out.

specificity is done for the solovent and also by without using any excipents .now every soloution is scaned formits their renge for the quantitte the absorbence.

Precssion is done by at variant levels by utilising the drug conceneration by performing within days and the in mutals days
Sureshbabu Kapavarapu, et al., (2015) were reported isocratic reverse phase liquid chromatographic for Saroglitazar by using UV detectar, Alltima ODS’s C18 (150.0 mm x 3.90 mm; 5 µ) column, mobile phase of mixtures of the disodium hydrogen phosphate buffer and acetonitrile at the ratio of 40:60 v/v and the flow of rate is 1.2m per min. Empower software been used for data processing and wavelength was detected at 294 nm. Linearity (10-60 µg/mL limit of detection (0.13 µg per ml) and limit of quantification (0.41 µg per m) are been determine.

Preparation of standard solution. Take 40 milligrams of sample in a 100 milliliter of volumetric flask to which is about mix the 60 milliliter of diluant and the solution which is further allow to sonicate for the period of 10 minute. And from which 10 milliliter of solution is taken into a 100 milliliter of volumatric flask which is add at to this with mobile phases and the corresponding solution now becomes a 40 micrograms per liter.

Preparation of sample solution
From which 20 tablets are been taken and measure exactly and allow to make powderd in a motor from which 40 milligrams are been taken in to 100 milliliter of volumatric flask. And further it is allow to filtered by using a flitrad membrane from this 1 ml of samples is taken in a 10ml of volumetric flask which is diluted with mobile phases.

B.Siddartha, et al.,(2014) were reported RP-HPLC method for Saroglitazar by using Kromasil C18 column (150.0 x 4.60mm x 5.0µm), mobile phase of buffer (1ml of ortho phosphoric acid was diluted to 1000ml with water) and acetonitrile at the ratios of 35:65v*v. The flow is at 1.0ml per min. analyte is monitored at 295nm, and the retentaion time is detemine at the 3.099min. The calebration cuvre is plotted and range from 10-60µg/ml correlation was found to be 0.9997. The accuracy range is between 98.87% and 101.45%. The %RSD of within a day and between two mutuals day precission are absorb less than 2.0. The lemit detecation (LOD) and lemit of quantiffication (LOQ) were found to be 0.716µg-ml and 2.169µg-ml respective. And this process is assayed and validated against ICH guidelines.
Preparations of standard solutions which is made by dissolving in 10 micrograms in 100 microliter of volumetric flasks to this a little amount of diluents is mixed which is further sonicate for the period of 20 minutes.

From which take a 4 microliter of the solution into a 10 microliter of volumetric flasks in order to get the final solution as 40 micrograms per microliter.

Preparation of the sample solution by taking the weight of 20 tabs and their average mass is measured which is in a powder form, allow to transfer into 10 microliter of volumetric flasks of 10 micrograms of drug to which diluents are added in order to dissolve from which take 4 microliter of solution to which add 10 microliter of diluents and filtered in order to get the final conc of 40 microliter per microliter.

**Ekta H. Amin., et al.** (2014) A new, simple, precise, accurate were reported a UV-Spectrophotometric method for Saroglitazar. The detection at 294 nm. Methanol used as solvent. At the concentration range of 8-24 µg/ml and recovery is 99.91%. The LOD and LOQ have been determined at the 0.50 µg per ml and 1.52 µg/. The validation of method was carried out as per ICH Guidelines. The validation of this method is carried out as per ICH Guidelines.

Preparation of standard stocks solution.

100 micrograms of drug is measured exactly and poured into a 100 microliter of volumetric flasks which further mixed with methanol.

From which 10 ml is taken out and mixed to with diluents up to 100 microliter along with CH3OH into a 100 microliter of volumetric flasks.

Assay procedure

20 tabs are taken which are measure exactly and make into powder from which 10 micrograms is measured and passed into 100 volumetric flasks which is allow to sonicated for period of 15 minutes up to the level of mark.

From which 1.5 microliter is taken in to 10 volumetric flasks which is mixed with CH3OH in order to get sample solution.

**Shekhar M. Bhavsar., et al.** (2010) were reported a simply, sensitive and rapid RP/HPLC method for concurrent determination of Lornoxcam and Thiocolchicoside by using the reverse phase C18 column (Inertsil ODS 3V C-
18, 250.0 x 4.6.0 mm,5.0 µ), mobile phassee of Bufer(5.760 grams of NH₃H₂PO₄ in2000mL of mili-Q water, which is further adjusted to the pH of 7.3 by using of (C₂H₅)₃NH₃: CH₃OH 45:55, the flow of rate is maintain at 1.5 ml per min, and the detecation is carried at the 290 nm.

The retentain time Lornxicam and Thiocolchicside determined at the 9.40 and 2.96 min. And linearity ranges from the 0.24 – 120 µg per ml (r²=0.999) for Lornxicam and 0.23 – 120 µg per ml (r²=0.999) for Thiocolchicoside the recovery is found to be 100 and 102%.

Preporation of standered soloution

By takeing 40micrograms of Lornxicam and 40micrograms Thiocolchicoside are taken into 200 microleter of voloumateric flaseks.

to this mix the moblie phases which is allowed to sonicate. From which take 10 microleter of a soloution to and mixwith 25 microleter of moblie phase,in ordered to achevie the fineal conc of 80pm.

Next involves the preparation of test soloution by taking a 20tabs which are allowed to make fine powderd from which 40milegrams of samle is taken added to 200 microlitar volumateric flaeks ,from which 100microlitar of diluants is mixe and shake mobli phases and allow to pass via fileration.

From this take 2.5microlitr wiyh moblie phases which is added with 10 microlitar of sample in ordered to get conc of 80pm.

A. Suganthi  .et al., (2012) were reported a simply, sensititve and fast RP/HPLC process for the concurrent determintion Lornxicam and Thiocolchicoside by using a RP-18 column,mobile phase 10mM ammonium acetate :methanol(50:50), pH7 adjusted with 1% triethyl amine. The retenation time of thiocolchicoside and lornoxicam there founded to be 4.6 and 10.2 min. Linearity of thiocolchicoside and lornoxicam is from of 1-10 µg per ml. And recovey of an thiocolchicoside and lornoxicam were found to be 100.45±0.4489 and 100.70±0.5111 And subjected to forced degeradation to alkali, acids conditions.

Preporation of standerd soloution by useing of CH₃OH in 100 volumateric flaseks. And the stockes soloutions which containes of mixtures of drugs which is prepared in by utiliseing CH₃OH.and the soloution which is obtained is further used for the calibearation curve are computed for the drugs.
Preparation of sample solution by taking 8 milligrams of each drug which are taken in the 100 microliter of both drugs, which are made with CH3OH and passed through the vacuum filter.

Accuracy and the precision accuracy of this process is demonstrated by recovery method an standard addition method by taking the amount of sample in the 50-100-150 percents of the concentrations which are mixed in to the matrixed.

The repetability is measure by within a days and between mutual days which are measured at the three different levels.

Harikiran. O.V., et al.  (2013) were reported a simply, sensitive and rapid reverse phase 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 of HPLC waters, which is further adjust pH 6.8 with sodium hydroxide) Acetonitrile of 35% and 65% flow of rate at 1.0 ml per min detection at the 298 nm. And the retention time for Lornoxicam and Thiocolchicoside has been determined at 4.50 and 3.40 min. The limit of detection is 0.37 µg/ml and the limit of quantitation is 0.12 µg/ml. Linearity and Lornoxicam and Thiocolchicoside are founded in that ranges of 1-50 µg/ml for LOR & 5.0 - 25 µg/ml for THIO.

The Accuracy % recoveries are between 98.0 % to 102.0%.

Preparation of standard solution take exactly 10 milligram of samples into 100 milliliter of volumetric flasks and to this mix diluents and allow to dissolve it until to the level. From which take 1.5 and 3 microliter of drugs into a 10 microliter of the solution.

Take 10 tab into a clean 100 milliliter of volumetric flasks which is 70 milliliter of diluant is added to it. Further allow to sonicate and made up to level from which take away 1.5 and 3 militer of Lornoxicam and Thiocolchicoside are taken into a 10 mls flask.

Madhusmita Sahoo., et al. (2011) were reported a simply, sensitive and also rapid RP-HPTLC methods simultaneous determination Lornoxicam and Thiocolchicoside with using mobile phases CH3OH: CH3OH:H2O: (9.6:0.2:0.2v/v/v) detected at 377 nm. The methods are is validated for linearity, accuracy, precision, LOD (Limit of Detecation), LOQ (Limits of
Quantification, robustness and specificity. And the reteradation factors have been found to be 0.84 ± 0.05 for lornoxi and 0.58 ± 0.05 for thiocol. And the further the Linearity is determined at the ranges of 60–360 ng-bands for lornox & 30–180 ng bands for the thiocol at the correlation coefficients $r^2 = 0.98$ and 0.99, respectively.

And the total recovery for the both as been founde at the range of 98.7–101.2%. This process is further optimiz and further it is validated as per the ICH guidelines.

Pankaj kumar., et al .,(2012) were reported a sensitive, analytical fast reverse HPLC methods to simulteneous determineation Lor noxicem and Thiocolchicosside in human plasma , moblie phase Phosphates bufer (ph 6.8) and ACN (70:30 ) in the isocratic propeites, flow of rate 1 ml per min, Phenomnex Luna S -C$^\text{18}$ coloumn (5.0 µm, 250.0mm X 4 600mm inte.dia) with PDA deteaction 295 nm.

The retnetion time for the Thiocolchcoside is 5.94 ± 0.2 min, for Lornoicam 14.53 ± 0.2 min. This process is validatted over the range of 100-500 ng-ml for Thiocolchicoside ($r^2= 0.9983$) and 200 -1000 ng/ml for Lornoxicam ($r^2=0.99$)

The lemit of detectation is determine at 33.270 ng per ml for Thiocolchocoside and 66.2ng per ml for the Lornxicam in the human plasma, and the least lemit of quantiffication of Thiocolchicoside and Lornxicam in a human plasma is found to be 100.82 and 200.48 ng per ml follows.

Accuracy

Is done by computing the recovery of sample by the standerd adition process. The recover of the process is done by three series of injections at variable conc.Precission It will be determine by the samples taking in within a days and between two mutuals days.

The result is displayed in terms of reletive standerd deviation

Preporation of standerd soloution by taking 10miligrams of sample into 100of volumateric flaseks,which is then added of moblie phases make the contant to the level make upto marek.

Preporation of sample soloution by takeing 20 tabs making into powdered forms by takeing 10mg of sampel to it a 100mlof volumateric flaseks from which takenoff2ml of which is mixed with mobile phases from which is made
upto level so that resulting soloution will becomes 20microgrames per militer conc.

Priyanka A Bhatt., et al .,(2013) were reported a quantitative analysis of Lornoxicam by Chromatographic separation Qualisil BDS C18 column (250.0×4.60 mm i.d.,5.0µ particle size) 5mM ammonium acetate: acetonitrile (65:35 %v/v), pH adjusted 5 with glacial acetic ascid. Rate of flow is 1 ml per min and the detecation at 290 nmm using PDA detectar. The method allowed to undergoes pressures state such as of hydrolysis, oxidetion, photlysis, thermal degradation the method is determine at linear in the renge of 5-15 µg per ml. The correllation coeficient is 0.999. The lod and loq are in the 200ng/ml and 600 ng per ml. The percent assay of Lornoxicam was 100.9 %. The method was validated by determining its accuracy, precision and system suitability and the stress degradation studys are also carry out and as per ICH guidelines.

Preporation of moblie phaseby taking 385 milegrams of amonieum acetate which is taken into 1000 militer of beaker which is disloved in a waters and the solvent is adjusted its ph by using formaic ascid.the buffer and acetonitrle are in the 65:35 and passed through vacme filtered.

Preporation of standerd soloution by takeing 100 micrograms of sample in the CH3OHwhich is diluated with stockes soloution with the moblie phases in the soloution at the conc of 5-8-10-12-15 microgrames per militer

Prajapati Arun M., et al ., (2014) were reported a method by reverse phase C18 column (Phenomenex 18 C, 250.0 mm × 4.60 mm, 5.0µm), moblie phase phosphate buffer (pH-3.5) : acetonitrile (65:35, v/v) with a flow of rate of 1 ml-min with Photo Diode Array detectar at 275 nmm. The retention times Tapentadol and LOR been 2.24 minu and 4.91 minu respectively. The linaerity of TAP and LOR are in the renge of 5-35 µg per ml and 2-12 µg/ml.

Accuracy
Is done by computing the recovery of sample by the standerd adition process. The recovery of the process is done by three series of injections at variable conc.Precission It will be determine by the samples taking in within a days and between two mutuals days.

The result is displayed in terms of reletive standerd deviation
Preparation of standard solution by taking 10 milligrams of sample into 100 milliliters of volumetric flasks, which is then added of mobile phases make the constant to the level make up to mark.

Preparation of sample solution by taking 20 tabs making into powdered forms by taking 10 mg of sample to it in a 100 ml of volumetric flasks from which taken off 2 ml of which is mixed with mobile phases from which is made up to level so that resulting solution will becomes 20 microgrammes per milliter conc.

Desai Chandni H., et al., (2015) were reported a best HPLC process for Thiocolchicoside Capsule dosages form. Thermo Hypersil Silica 5 µ, (250 mm x 4.6 mm). Mobile phase a mixture of N-Heptane: CH₃: Chloroform: CH₃COOH (70: 20: 10: 0.2 %). The rate of flow is was 1 ml per min at UVis Detection at 360 nm. The Retention time of Thiocolchicoside is 7.7 min. The method is validated for linearity, accuracy, precision, limit of detection, limit of quantification and Robustness. Calibration curve is found to be linear between (5-15 µg/ml) of correlation coefficient (r² > 0.99).

The limits of detection and Quantitation been founded at to 0.15 and 0.46. The % recovery was found to be in the range 98-102%.

Preparation of standard solution of Thiocolchicoside 100 microliter is prepared by dissolve 10 milligrams of 100 milliter with the 50 milliter of methanol.

Preparation of standard solution of the thiocolchicoside of 100 micrograms per milliliter into conical flasks using a methanol which is further allow to sonicates and made up with the methanol.

Preparation of the calibration curve is done by taking 10 milligrams of thiocolchicoside allow to dissolve in the CH₃OH. From which 1 ml of solution is taken to add 10 ml of diluant to the 10 ml. from this make a series of solution which is further used for calibration curve process.

Mahesh Attimarad., et al., (2010) were reported a simply, rapidly, specific and precise HPLC method for Iornoxicam separation of the drug by using eclipse C₁₈ column (150.0 mm x 4.60 Mm, 5.0 µm) the stationery phase the mobile phase is CH₃OH: 0.1% HCOOH in water (80:20), rate of flow is 0.8 ml per min and UVis is detected 381 nm. The suggest process is validated for linearity, accuracy, and precision, limit of detection (LOD) and limit of
quantitation (LOQ). Linearity, accuracy and precision are been accepted at the range of 0.5-20 µg per ml.

This process involves preparation of standard solution is done by taking 10 milligrams of lornoxicam with a CH3OH into a 100 of volumetric flasks. from which 0.5 -20 microgram per milliliter has been taken from the stock solution.

Preparation of sample solution by taking 20 tabs which allowed to form powdered form into a mortar from equal mass is taken into 50ml of volumetric flasks, which is further dissolved in a CH3OH and filtered by utilizing vacuum pump.

Precision of an assay is been monitored in terms of repeatability are been done within a days and between mutuals days varients by takeing area of the peak of drug solution containing 4 microliters.

Accuracy of this process is done by taking amount of drug solution which are already pre analysed.

B. M. Solanki., et al. (2012) were 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 x 4.6 mm) flow of rate of is 1.0 ml per min and detection is in 381 nm. And elution of a time is 5.62 min. The calibration curve is linear at the range of 5g per ml to 30 g per ml. The limit of detection is 0.69 g per ml and the limit of quantitation is 2.10 g per ml. The recoveries are 100.33% - 100.60%.

Preparation of buffer solution is done by taking 0.02M Na2HPO4 solution which is further adjusted with H3PO4.

Preparation of standard solution by taking 10milligrams of lornoxicam into 100 of volumetric flasks, which is then added with 0.1N naoh and again it is added with 60ml of mobile phases make the constant to the level. from which take 2ml and make upto mark.

Preparation of sample solution by taking 20 tabs making into powdered forms by taking 10mg of sampel of lornoxicam to it in a 100ml of volumetric flasks from which taken off 2ml of which is mixed with mobile phases from which is made upto level so that resulting solution will becomes 20 microgrammes per milliter conc.
M. T. Harde., et al., (2012) Developed and validated UVis Spectrophotometric process for the simultaneous determination of Thiocolchicoside & Dexketoprofen bulks & in tablets dosages form detected at 237nm. It involves preparation of standard solutions such as by taking 10 miligrams of individual drugs are taken into the CH3OH separately into a 100 ml of volumetric flasks, and it is again diluted in order to achieve the final concentration.

Preparation of sample solution for the combines dosages forms are by taking 20 tabs allow to powderd, from which 4 miligrams of equivalent is sample is taken transferred into 100ml of volumetric flask which is consists of 70ml of CH3OH which is allow for sonicate and filtered by using vacuum pump and made to the level by CH3OH.

Accuracy is done by computing the recovery of sample by the standard addition process. The recovery of the process is done by three series of injections at variable conc. Precision will be determine by the samples taking in within a days and between two mutual days. The result is displayed in terms of relative standard deviation.

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

Analysis of capsules

The 20 capsules measure and make them into powderd which is make into two variable soloutions from the powder 10 mg of equivalents of samples are been taken which are poured into a 10mls of volumetric flaseks in which it contain 10mels of CH3OH. The solution is sonicated for the 10 minut from which take 0.2 ml of solvent which is diluteed to 10 mls with CH3OH, which is transfered into 10mls volumetric flaseks. The solution is filter by paper. Accuracy is done by computing the recovery of sample by the standard addition process. The recovery of the process is done by three series
of injections at variable conc. Precision It will be determined by the samples taking in within a days and between two mutuals days.

The result is displayed in terms of relative standard deviation.

**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 the linearity, accuracy and precision.

Accuracy is done by computing the recovery of sample by the standard addition process. The recovery of the process is done by three series of injections at variable conc. Precision Accuracy is done by computing the recovery of sample by the standard addition process. The recovery of the process is done by three series of injections at variable conc.

Kulandaivelu Karunakaran., et al., (2014) reinforce a new simultaneous determination of paracetamol and lornoxicam by RP-HPLC utilizing a 18C column, acn and 0.02 M KH$_2$PO$_4$ in the 35:65 (v) as the mobile phase, rate of flow is 1.0 ml per min. A linear response is determined at the concentration range of 125–375 µg per ml and 2–6 µg per ml with the correlation coefficient is greater than that of 0.99. Even though the tablet persist with dose of (500 mg) and least dose of (8 mg)

Which is further examined for the within day and between two mutuals days was found to be lesser than that of 2% of RSD. And the accuracy results which are gained are in between 98% to 102%. And the drug molecules are forcefully exposed to ascidity, basicity, peroxide, thermal and photolytic conditions. Accuracy is done by computing the recovery of sample by the standard addition process. The recovery of the process is done by three series of injections at variable conc. Precision It will be determined by the samples taking in within a days and between two mutuals days.

The result is displayed in terms of relative standard deviation.
Preparation of standard solution by taking 250 milligrams and 4 milligrams of sample into 100 milliliters of volumetric flasks, which is then CH3OOH and acetone: 70:30 of mobile phases make the content to the level.

Preparation of sample solution by taking 5 tabs making into powdered forms by taking 10 mg of sample to it in a 500 milliliter volumetric flasks from which taken off 300 ml of which is sonicated for 30 minutes and mixed with mobile phases from which is made up to level so that resulting solution will become 250 micrograms per milliliter conc.

Veena G. Kulkarni., et al., (2011) were reported a scientific, analytical, correct process for the Paracetamol and Lornoxicam by using RP-HPLC. By using Jasco HPLC help of Grace C18 column (150.0 mm x 4.60 mm int.dia) and UV/VIS detector by using Acn: 0.04 Mm KH2PO4 buffer in the ratio of (60:40,) rate of flow at the 1.0 ml per min and the detection is absorb at the 270 nm. The retention time for the Paracetamol and Lornxicam was found to be 1.956 ± 0.002 and 3.171 ± 0.018 min follow. The consequences of the line are in the range of 2-12 µg per ml for the both drugs.

AccurecyIs done by computing the recovery of sample by the standard addition process. The recovery of the process is done by three series of injections at variable conc. Precission It will be determine by the samples taking in within a days and between two mutuals days. The result is displayed in terms of relative standard deviation.

Preparation of standard solution by taking 10 milligrams of Lornoxicam into 100 milliliters of volumetric flasks, which is then added with 0.1N NaOH and again it is added with 60 ml of mobile phases make the content to the level. From which take 2 ml and make up to mark.

Preparation of standard solution by taking 10 milligrams of sample into 100 milliliters of volumetric flasks by dissolving 10 milligrams in 10 milliter of solution from which is 10 ml of mobile phases is taken to get the actual conc of 100 milligrams per liter make the content to the level which gets the final conc level of 10 milligrams per minute.

Preparation of sample solution by taking 20 tabs making into powdered forms by taking 10 mg of sample of sample to it in a 100 milliliter volumetric flasks from which taken off 2 ml of which is mixed with mobile phases from
which is made up to level so that resulting solution will become 20 micrograms per milliter conc.

The result is displayed in terms of relative standard deviation.

**Firoz Khan., et al.**(2011) were developed and validated for lornoxicam by second order derivative shows λ max at 257.2 nm. This obeys the Beer-Lambert’s law at the concentration range of 7.5 – 25.0 µg/ml and the correlation coefficient is 0.99. and the process is further validated.

Preparation of standard solution by taking 10 miligrams of sample into 100 ml volumetric flask, which is then added with 0.1 N NaOH and again it is added with 60 ml of mobile phases make the constant to the level from which take 2 ml and make up to mark.

Preparation of sample solution by taking 20 tabs making into powdered forms by taking 10 mg of sample into a 100 ml of volumetric flask from which taken off 2 ml of which is mixed with mobile phases from which is made up to level so that resulting solution will become 20 micrograms per milliter conc. Accuracy done by computing the recovery of sample by the standard addition process. The recovery of the process is done by three series of injections at variable conc. Precision it will be determine by the samples taking in within a days and between two mutuals days.

The result is displayed in terms of relative standard deviation.

**Santosh Kumar M., et al.**(2014) Developed a RP-HPLC for Etoricoxib and Thiocolchicoside Hypersil BDS C18 (250.0 x 3.40 mm, 5.0 µm) with mobile phase mixture of Buffer and Acetonitrile 60:40, pH adjusted to 3.1, flow of rate at 1.2 ml-min. UV is detected at 258 nm. Range is good (r² > 0.999). The mean recoveries of the method were 99.75% and 100.24% for Etoricoxib and Thiocolchicoside.

Preparation of buffer solution is done by taking exactly 1.35 grams of potassium dihydrogen phosphate into a 1000 ml of volumetric flask to which about 900 ml of water has been added of triethylamine which is allowed to sonicate finally made adjusted to the level.

Preparation of standard solution by taking 60 milligrams and 10 milligrams of etoricoxib and thiocolchicoside into 10 of volumetric flasks, which is then added with 7 ml of acetonitrile as a diluant from the stock solution take 1 ml is taken out into 10 of volumetric flasks and mobile phases make the
content to the level. Accuracy is done by computing the recovery of sample by the standard addition process. The recovery of the process is done by three series of injections at variable conc. Precision will be determined by the samples taking in within a days and between two mutuals days.

The result is displayed in terms of relative standard deviation.

Alagar Raja, M., et al. (2012) developed a reverse phases HPLC methods for the simultaneous estimation of Etodlac and thiocolchicoside. The mobile phase are used in the ratios of ACN:$\text{KH}_2\text{PO}_4$ buffer (ph of 3.0) (50.0:50.0). The detection is absorb at 255 nm and rate of flow is 1 ml per min. Linearity which is present at the concentrations of 100-600µg per ml of etodlac and 1-6 µg per ml of thiocolchicoside with the correlation coefficient is 1 and 0.99. The process which is scientific, analytical with their recoveries are at the range of 99.65 and 99.6% for the drugs and relative standard deviation < 2.

Accuracy is done by computing the recovery of sample by the standard addition process. The recovery of the process is done by three series of injections at variable conc. Precision will be determined by the samples taking in within a days and between two mutuals days.

The result is displayed in terms of relative standard deviation.

V. V. Chopade., et al. (2014) developed a new process which is under chemicalised pressure state for the studies of lornoxicam as a self emulsifying drug by HPTLC, precoated aluminium plates with silica gel 60F-254 as the stationary phase. The solvant systems consist of a dichlormethane: ethylactate: glacialactic acid (9.5:5.0:0.1). And linear regression data of calibration plots showed good linear relationship with $r^2$=0.989 at the concentration range of 200-/600ng/band. The process is validated for precision, accuracy, ruggedness and recovery study. method is subjected to thermal degradation studies.

Preparation of standard solution by taking 10milligrams of lornoxicam into 100of volumetric flaseks which consists of CH$_3$OH, again it is added with 10ml of mobile phases make the content to the level and make upto mark. In orderd to get the final conc of 20 µg/ml

Accuracy is done by computing the recovery of sample by the TLC process. The recovery of the process is done by spotting a at variable conc.
Precission It will be determine by the samples taking in within a days and between two mutuals days.
The result is displayed in terms of reletive standard deviation

G. Abirami., et al., (2014) were reported a new simple accurate Reverse phase-HPLC process for determination of the Thiocolchicoside and Ketoprofen in bulk tablets dosages form, by using 18C column (150.0 mm x 4.60 mm; 5.0µ) mobile phase of ACN & Water in a ratio of 60:40 at a rate of flow is 1.0 ml per min. The detected at 300 nm.
The retention times were 3.7 ± 0.1 min for Thiocolchicoside and 7.90 ± 0.1 min for Ketoprofen. Calibration curve was linear over the concentration range is 80-120 µg per ml for Ketoprofen and 6.4 – 9.6 µg per ml for Thiocolchicoside.
The suggested process is further validated as per ICH guidelines.
Preparation of standard solution by taking 125 miligrams of ketoprofen and 25 miligrams into 50 of volumetric flasks, which is dissolved in a CH3OH as a mobile phases make the constant to the level up to mark.

Linearity and the calibration curve.
And the series of samples of stock solution are transferred into a 25 ml of volumetric flasks which is made up to level with the mobile phases. And after diluted is take 5 milliter from the stock solution which is made up to 25 milliter mobile phases at the conc 80-120 micro milliter.
From the solution about 20 microliter are injected as a result a chromatography which is monitored as a result area of a peak is drawn which is from the conc further its is calibrated.
Accuracy is done by computing the recovery of sample by the standard addition process. The recovery of the process is done by three series of injections at variable conc. Precission It will be determine by the samples taking in within a days and between two mutuals days.
The result is displayed in terms of relative standard deviation

A. Suganthi., et al., (2012) suggested a scientific, analytical and accurate spectrofluorimetric process for the determination of Thiocolchicoside in pure and its pharmaceutical preparation. This process is based upon the oxidation of thiocolchicoside with cerium (IV) to produce cerium (III), where the fluorescence is monitored at 366 nm and in the excited condition is at 289 nm.
The observed calibration graph is linearity over its range of 1-10µg per ml.
which is applied successfully as a assay for the bulk powder and sum of accuracy is of 100.08±0.2059. Recoveries are 99.2 and 99.0 % at 50% and 100% level with the RSD values of 0.227 and 0.044%.
Accuracy is done by computing the recovery of sample by the standard addition process. The recovery of the process is done by three series of injections at variable conc. Precision is will be determine by the samples taking in within a days and between two mutuals days.
The result is displayed in terms of relative standard deviation.

**Shivani A. Trivedia., et al.,(2015)** Developed a RP-HPLC method for thiocholchicoside 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 rate of flow 1 ml per min with UVs detection is 254 nm. And time run has founded to be 1.41 min and 7.58 min for thiocholchicoside and dexketoprofen trometamol, respectively.
The process is validated as per ICH guidelines. The calibration plots were linearity in the range of 1-5 µg per ml with R2=0.998 for thiocholchicoside and 6-30 µg per ml with r2 = 0.995 for dexketoprofen trometamol.
The % recovery values were found to be 98.52 ± 1.21 and 98.16 ± 1.45 for thiocholchicoside and dexketoprofen trometamol, respectively. The minimum detectable and minimum quantifiable amounts are found to be 0.11 and 0.35 µg/ml, respectively for thiocholchicoside and 1.41 and 4.38 µg/mL, respectively for dexketoprofen trometamol.
Accuracy is done by computing the recovery of sample by the standard addition process. The recovery of the process is done by three series of injections at variable conc. Precision is will be determine by the samples taking in within a days and between two mutuals days.
The result is displayed in terms of relative standard deviation.

**Suganthi A., et al.,(2013)** Reported a Quenchofluorimetric method for lornoxicam in pharmaceutical formulation. Quenchefing effect of lornoxicam on
the native fluorescence of the eosin in ascidic medium due to the formation of ion pair complex. Standard stock solutions of lornoxicam, 1 mg/ml has prepared using methanol. Aliquot volume of the drug solution of lornoxicam was added to 2 ml of acetate buffer (pH 5.5) and 0.4 ml of 0.004 % eosin, and the volume was made up to 10 ml with water.

The fluorescence intensity of the resulting solutions was measured at 545 nm and the after excitation at 399 nm. Which are apply under a specific state the process is applicable over concentration ranges of 2.0-20 µg per ml with the detection limit of 0.1369µg/ml. The percentage recoveries for dosage form were found to be 99.93±0.1554 for 50% and 99.88±0.0612 for 100%.

**Accuracy**

Is done by computing the recovery of sample by the standard addition process. The recovery of the process is done by three series of injections at variable conc. Precision It will be determined by the samples taking in within a days and between two mutuals days.

The result is displayed in terms of relative standard deviation.

**Sasmita Kumari Acharjya., et al.,(2010)** were reported a Spectrophotometric methods for thiocolchicaside using A double beam UVVIS spectrophotometer (UV-1800, Shimadzu, Japan).

Preparation of standard solution of thiocolchicaside by taking 10 miligrams of lornoxicam into 100 of volumetric flask, which is then added with 0.1N NaOH to obtain a last conc of 100 microgram per ml. The solution is again diluted for the again standard solution.

**Accuracy**

Is done by computing the recovery of sample by the standard addition process. The recovery of the process is done by three series of injections at variable conc. Precision It will be determined by the samples taking in within a days and between two mutuals days.

The result is displayed in terms of relative standard deviation.

**Jyoti Shrivastav., et al.,(2011)** Reniforce a HPTLC process for simultaneous estimations thiocolchicoside & diclofenac potassium. Chromatographic separation were performed on the silica gel plates of 60 F54 has the stationary phases and the toluene: acetone: methanol: formic acid (5:2:2:0.01) as mobile phases.
Accuracy is done by computing the recovery of sample by the standard addition process. The recovery of the process is done by spotting methods at variable conc. Precision is determined by the samples taking in within a day and between two mutual days.

The result is displayed in terms of relative standard deviation.

**Pasupuleti Sunitha ., et al .,(2015)** were reported a simple, analytical, scientific process for the quantitative estimation of indinavir sulphate by RP-HPLC by using a Zodiacs ODS hyparsil C18 column (250mm 4.6mm int diam and 5µm particle size) and the mixtures of phosphate buffer pH of 5.5 ACN:CH$_3$OH (50:30:20) as a mobile phases. Further the components is quantified by using a UV detector at 260nm. Linear at the range of 48µg per ml to 112µg per ml. The accuracy of this process is absorb within a range that of 98.36% to 101.74%.

Preparation of mobile phases solution by filtered through vacuum pump of a mixtures of phosphate buffer, acetonitrile and CH$_3$OH are in the forms of 5:3:2.

Preparation of standard solution by taking 10milligrams of sample into 100 of volumetric flasks, which is then added 100ml of mobile phases is added to it from which take off 2ml of solution it is transfered into a 10ml of volumetric flask and the mobile phases is make to the level upto mark.

Preparation of sample solution by taking 20 tabs making into powdered forms by taking 10mg of sample of lornoxicam to it in a 100ml of volumetric flask from which taken off 2ml of which is mixed with mobile phases from which is made upto level so that resulting solution will becomes 20microgrames per milliter conc.

Accuracy is done by computing the recovery of sample by the standard addition process. The recovery of the process is done by three series of injections at variable conc. Precision is determined by the samples taking in within a days and between two mutuals days.

The result is displayed in terms of relative standard deviation.

**K. Rajitha ., et al .,(2014)** was developed a new process for the indinavir capsules by utilizing a hplc and renifores a process developed and validation.
In Capsules C18G (250.0 X 4.60 mm; 5.0µ), a the source of moblie phases of triethylammonium phosphete bufer (ph 2.5): and the acetonietrile is in equimolar mixture of 50:50 ,
The rate of fowl is 1.0 ml/min and the wavelength is detected at the 220 nm using a UVIs detectar. Linaerity in the renge of 50-150g per ml.
Preporation of buffar soloution is done by mixing a 5militer of triethylamne into a1000 militer of water to which adjusted to ph of 2.5 by useing a orthophosphoreic ascid in water, which is again filter by membrane .
Preporation of moblie phases is done by preporaing mixtures of acetonitrile and buffar which is further sonicates such that to remove air bubeses.
Preparation of standard solution is done by takeing exactly 10miligrams of sample in a 100militer of volumateric flaseks in which constist of 50 ml of diluant which is allow to disovle by sonication and further it is make upto level. The final conc is obtained is about 100 µg/ml)
Accurecyls done by computing the recovery of sample by the standerd adition process. The recovery of the process is done by three series of injections at variable conc.Precission It will be determine by the samples taking in within a days and between two mutuals days.The result is displayed in terms of reletive standerd devation

K.Rajitha., et al .,(2014) Was developed a new process for the indinavir capsules by utilizing a hplc and renifores a process developed and validateation
In Capsules C18G (250.0 X 4.60 mm; 5.0µ), a the source of moblie phases of triethylammonium phosphete bufer (ph 2.5): and the acetonietrile is in equimolar mixture of 50:50 , The rate of fowl is 1.0 ml/min and the wavelength is detected at the 220 nm using a UVIs detectar. Linaerity in the renge of 50-150g per ml.
Preporation of buffar soloution is done by mixing a 5militer of triethylamne into a1000 militer of water to which adjusted to ph of 2.5 by useing a orthophosphoreic ascid in water, which is again filter by membrane .
Preporation of moblie phases is done by preporaing mixtures of acetonitrile and buffar which is further sonicates such that to remove air bubeses.
Preporation of standard solution is done by takeing exactly 10miligrams of sample in a 100militer of volumateric flaseks in which constist of 50 ml of
diluant which is allow to disolve by sonication and further it is make upto level. The final conc is obtained is about 100 µg/ml.

Accuracy is done by computing the recovery of sample by the standard addition process. The recovery of the process is done by three series of injections at variable conc. Precision is determined by the samples taking within a days and between two mutual days.

The result is displayed in terms of relative standard deviation.

*Chandni Saha., et al.,*(2014) developed a method for Cobicistat by using spectrophotometric by using 0.1N HCl. The λmax was determined be 246.2nm.

The procedure is examined and shows to be linear in the range of 10.0-150µg-ml, exhibited good correlation coefficient (R²=0.9998).

Preparation of stock solution is done by taking 0.1 grams of sample which is further diluted with hydrochloride acid in order to obtain the final conc of 200 µg/ml.

And the determination of the maxima absorption is done by taking 2.5mls from stocks solutions into a 10 militer of volumetric flasks which is made upto the levels by utilising 0.1N hcl, which is further scanned across the wavelength.

Accuracy is done by computing the recovery of sample by the standard addition process. The recovery of the process is done by three series of injections at variable conc. Precision is determined by the samples taking within a days and between two mutual days.

The result is displayed in terms of relative standard deviation.

*G. Raveendra Babu., et al.,*(2013) suggested a new a simply, rapidly, accurate and precise procedure for the Darunavir in the pure & its tablet dosages form. By utilizing a Hypersil BSD 18-C column (250 m x 4.60 mm, 5.0µm) phosphata buffer pH 3 acetonitrile as in ratios of 40:60, detection 270 nm.

The rate of fowl is 1.0 ml/min.

In this process involves the proportion of phosphate buffer by taking the 2.73 grams of of KH2PO4 is measured exactly poured into a 1000 militer of
beakar which is again diluted for the level with water and it is maintained with ph 3 with an orthophosphoric ascid.

Preporation of moblie phases is done by takeing 400militer of phosphaete buffar is mixed with acetonitreli of 600militer.the soloution is furthur sonicated for 5minutes in ordered to removed gases. And the same solvant is made upto level.

Preporation of standerd soloution by taking 10miligrems of darunevir into 10 of volumateric flaseks, from which add about 7militer of diluant which is moblie phases make the contant to the level upto marek.

Preporation of sample soloution by takeing 20 tabs making into powdered forms by takeing 10mg of sampel of lornoxcam to it in a 100mlof volumateric flaseks from which takenoff2ml of which is mixed with mobile phases from which is made upto level so that resulting soloution will becomes 20micrograms per militer conc.

Accuracy
Is done by computing the recovery of sample by the standerd adition process. The recovery of the process is done by three series of injections at variable conc. Precission It will be determine by the samples taking in within a days and between two mutuals days.

The result is displayed in terms of reletive standerd deviation.

estimation of darunaver in the tab dosages forms

the market formuleation of tabs are taken for the evaluation for the studies in which 20 tabs are taken and measure and allow to form powdered in a motar. the exactly sample is taken in powder of its equivalent forms. 10miligrams of samples taken into 10 militer of volumateric flask and is disllove in 7 militer of phosphate buffar and the acetonitrle, the contants are mixed in the flasks from which 3militer of sample is taken and shaken well for 20minutes such that the drug obtain completely stabelity. and the soloution is passed through filter and the sample which is obtained is made into six injects to get the chromatograph against the peak area is computed.

Bhavini N., et al., (2012) Has suggest a simply, precise, rapidly and accurate reverse phase HPLC method for Darunavir ethanolate in the tablets dosages forms, by Phenomonex Lunna 18-C coloumn (250.0 m intdiametr., 4.60mm, 5.0µm) moblie phases are waterand the Acetanitrile (40: 60, ; ph is
set to 3.2 with the formic acid). The rate of flow is 1.0 ml/min detected at 267 nm.

The detector responded is linear in the concentration of 2-20 µg per ml. The limit of detection and limit of quantification is determined at be 0.085 µg per ml and 0.38 µg per ml.

Here the process about preparation of mobile phases done by taking 40 ml of H2O and acetonitrile 60 ml and maintaining the its pH of 3.2 by formic acid.

Preparation of standard solution
Is done by taking 25 milligrams of sample into 25 ml volumetric flasks, which is then added with CH3OH as a mobile phases which is again diluted with 25 ml of mobile phases further make the constant to the level upto mark.

Preparation of sample solution
Is done by taking 20 tabs making into powdered forms by taking 2.5 mg of sample of lornoxcam to it in a 25 ml of volumetric flask which allowed to sonicated for 15 minutes and the sample is preserved at cool temperature which is mixed with mobile phases to get the conc of 1000 ug/ml.

Accuracy
Is done by computing the recovery of sample by the standard addition process. The recovery of the process is done by three series of injections at variable conc.

Precision
It will be determined by the samples taking in within a days and between two mutuals days.

The result is displayed in terms of relative standard deviation

Padmanabh B., et al., 2015) Was developed high performance thin layer chromatographic (HPTLC) for simultaneous estimation of Darunavir ethanolate and Ritonavir in combined tablets dosage by using precoated plates alluminium silica gel plates The mobile phases are Toluene: Ethyl acetate: Methanol (6: 2.5: 1.5, v/v/v) with UV detection at 250 nm.

The retention factors for the Darunavir ethanolate & Ritonavir was determined to be at 0.29-0.005 and 0.50-0.07. Linear at concentration ranges from 200-1000 n/g band for both the drugs. Intra-day variation, as RSD (%), was found to be in the range of 0.45 to 1.54 for Darunavir ethanolate and 0.22 to 0.64 for
Ritonavir. Interday variation, as RSD (%) was found to be in the range of 0.64 to 1.48 for Darunavir ethanolate and 0.13 to 1.24 for Ritonavir. The lower values of % RSD obtained is shows that the process ismost scientific and roboust.


Urooj Fatima., et al., (2014) were developed a new analytical method for Cobicistat by RP-HPLC is specific, precise, accurate, rapid, sensitive and faster elution by using coloum C18 (4.6 x 100 mm, 5mm) in an isocratic mode methanol / water ratio of 20:80 as the moblie phases and the rate of flows 0.8 ml per minute UVIs detection at 249 nm.

Preporation of standerd soloution
Is done by taking 10miligrems of sample into 100of volumateric flaseks, which is then added of moblie phases, from which take 0.3 militer is taken out such that into 10 militear of volumateric flask make the contant to the level make upto marek such that the final conc will become a 30 microgram per militer.

Preporation of sample soloution
Is done by takeing 20 tabs making into powdered forms by takeing 10mg of sampel of lornoxcam to it in a 10ml of volumateric flaseks from which takenoff 7ml of which is furthur sonicated for the 10 minutes such that’s the drug is completely dislove mix with mobile phases from which is made upto level from that 0.3ml is taken off so that resulting soloution will becomes 30microgrames per militer conc.

Accurecy
Accurecy of the scientific process done by computing the recovery of sample by the standerd adition process. The recovery of the process is done by three series of injections at variable conc. This measured by considering the know amouent of sample and in the tablets powdered form.

The result which is obtained is measure by takeing the standerd graph.

Precission
It will be determine by the samples taking in within a days and between two mutualls days.
The result is displayed in terms of relative standard deviation.

**Putchakayala Purnachandra Rao., et al. (2014)** were developed a new HPLC method for Emtricitabine, Tenofovir disoproxyl fumarate, Cobicistat, Elvitegravir in tablet dosage form by using Inertsil 3VS (4.0 x 250.0mm, 5m,) with a mobile phase of 0.1% TFA and Acetonitrile in gradient mode, flows of the rate 1.2 ml/min, and the detection at the 242 nm carry through by using UVVis detector.

The retention time of Emtricitabine, Tenofovir disoproxyl fumarate, Cobicistat, Elvitegravir are determined at 3.43, 4.75, 5.27, and 7.56 minute.

Preparation of standard solution by taking 200 miligrams of emtricitabine and 300 of tenofvir disoproxyl fumarate and 150 miligrams of cobicistat into 100 of volumetric flasks, which is then added of mobile phases, i.e., CH3OH, from which take 50 mls of stocks solution into 50ml volumetric flasks make the constant to the level make upto mark.

Preparation of sample solution is done by taking 20 tabs making into powdered forms by taking 200mg of emtricitabine and 300 of tenofvir disoproxyl fumarate and 150 miligrams of cobicistat in a 100ml of volumetric flasks with CH3OH which taken off 5ml of which is mixed with mobile phases into 50ml of volumetric flasks from which is made upto level so that resulting solution will becomes 10 micrograms per militer conc.

Accuracy is done by computing the recovery of sample by the standard addition process. The recovery of the process is done by three series of injections at variable conc. Precision it will be determine by the samples taking in within a days and between two mutuals days.

The result is displayed in terms of relative standard deviation.

**Amit Patel., et al. (2013)** Developed HPLC/ms process for the determination of the darunavir and ritonvir in the humans of plasmas which is ratified by using a clonazapam as the internal standard and the 2.5 as the run time. Mean recovery of darunavir, ritonvir and clonazapam were founded at over 90.1%, 88.8% and 91.5%. Range from 5.103-5039.955 ng per ml and 3.181-3079.989ng per ml for darunavir and ritonavir.
Accuracy
Is done by computing the recovery of sample by the standard addition process. The recovery of the process is done by three series of injections at variable conc.

Precision
It will be determined by the samples taking in within a day and between two mutual days. The result is displayed in terms of relative standard deviation.

Ashok R. Parmar, et al., (2012) were reported a scientific, simple, accurate and analytical process for the spectrometric process for the simultaneous determination of Aceclofenac and the Serratiopeptidase by using a double beam UV-Vis Spectrophotometer by the thermal electron Corporation by using solvents such as ethanol and the water. It shows the maximum absorb for the aceclofenac and Serratiopeptidase by using as ethanol as the diluted with water it has found to be at 316 nm and 375 nm, follows. It accepts beverages in the specific levels of 30-70 µg per millilit and for the Aceclofenac and 100-300 µg per milliliter Serratiopeptidase. The sum recoveries which are obtained for the Aceclofenac & Serratiopeptidase are in the 99.193 % and 99.153 %.

Preparation of standard solution
Is done by taking 10 milligrams of aceclofenac and 10 milliter of ethanol and 30 mgs of seratiopeptidases into 100 of volumetric flasks, which is then added of distilled water of stockes and make the constant to the level make upto marek.

The linearity studies are done by using standard solution of into volumetric flasks into which is added with a water which is maintain its pH is done by water.

Then after to this add mls of biuret reagent to the volumetric flask for mins.

Then after to this add 10 ml of ethanol nto a volumetric flask from this solution take 10 ml and 1 ml of biurat reagent is mixed which is used as blanks solution.

Preparation of sample solution by taking 20 tabs making into powdered forms by taking 10 mg of sampel it in a 100 ml of volumetric flasks from which takenoff 2 ml of which is mixed with mobile phases from which is made
upto level so that resulting solution will becomes 20micrograms per militer conc.

**Ashok R. Parmar., et al., (2012)** were reported a scientific, analytical process which is of very simple and accurate AUC curve spectrometric method for simultaneous determination of Aceclofenac and the Serratiopeptidase by using a double beam UV/Vis Spectrophotometer by the thermal Electrons Corporation by using ethanol and water as a solvent, Absorption is found at the maxima at 316 nm and 375 nm.

Preparation of standard solution
Is done by taking 10milligrams of acelofenac and 10 militer of ethanol and 30mgs of seratiopeptidases into 100of volumetric flaseks, which is then added of distilled water of stockes and make the contant to the level make upto marek.

The linearity studies are done by using standard solution of into volumetric flaseks into which is added with a water which is maintain its ph is done by water.

Then after to this add mls of biuret reagant to the volumetric flask for mins.

Then after to this add 10ml of ethanol nto a volumetric flask. From this soloution take 10ml and 1ml of biurat reagant is mixed which is used as blanks soloution.

Preparation of sample soloution by taking 20 tabs making into powdered forms by taking 10mg of sampel it in a 100ml of volumetric flaseks from which takenoff2ml of which is mixed with mobile phases from which is made upto level so that resulting soloution will becomes 20micrograms per militer conc.

**Pawar V .T ., et al .,(2011)** Developed a spectrophotometric methods for simultaneous determination of a Aceclofenac and the paracetamol analysis of jasco v-530 spectrophotometer 274 nm & 248 nm as analytical wavelengths recoveries ranging from 100.49 to 101.33 %.

Preparation of standard solution
Is done by taking 10milegrams of samples are been taken into 20ml of methanol and the voloume of a soloution is make to 100ml by utiliseing the
water inorder to get the final conc of 100microgram per militer into a two diffrant volumateric flasks.

Estimation of wavelengh for the parrel analyis .

It is done by takeing the 2 standerd drugs soloution by using a methanol and water which consist of aceclfenac and paractamol which are allow to moniterd under a renge of 200-400nms for the maxima absorb of drugs.

Preporation of sample soloutons

It is done by takeing 20tabs from the markt formuleation which contain about 100mg of aceclfenac and 500mg of paractamol which are allow to make powder and from their equivalent of sample of 10mg is taken into a 100 µg/ml of volumateric flasks which allowed to sonicate for the periods of 10minutes. And furthuer it is allow to passes through filter paper. The result is displayed in terms of reletive standerd devation

Accurecy

Is done by computing the recovery of sample by the standerd adition process. The recovery of the process is done by three series of samples at variable conc.

Precission

It will be determine by the samples taking in within a days and between two mutuals days. The result is displayed in terms of reletive standerd devation .

Srujani. Ch., et al .,(2014) proposed a UVis Spectroptometric Methods to the Aceclofenac and the solvent used was methanol:water (40:60). The absorption maxima was found to be 274.65nm for the method A (Zero order), 259nm for method B (first order derivative) and for method C (Area under curve) was measured from 269-279nm. The methods were found to be linear in the range of 5-30µg-ml and the correleation coefficient values are founded at the 0.9994, 0.9991, and 0.9995 respective. The development of methods were validate in terms of linearity, accurecy, precission in accordance with the ICH guidelines.

Preoration of stocks soloution

Is done by takeing 50mg of standerd soloution of aceclfenac are taken exactly into a 50ml of volumateric flasks .into this add 20ml of CH3OH allow to shake for 10 minutes.which is make upto the level with water .
Preparation of standard solution by taking 10 milligrams of sample into 100 of volumetric flasks, which is then added of mobile phases make the constant to the level make up to make.

Preparation of calibration curve
Is done by using method a which is a zero order method. From which take 0.5 milliter of 1, 1.5, 2, 2.5, 3 milliter which are taken out into a 10 milliter of volumetric flasks which is made up to the level with water which gives a final conc of 10 microgram per milliter.
The sample is allowed to monitored user the range of 400-200 nms here shows the maxima absorbed in the uvis spectrum. The calibration curve is drawn by correlation coefficient is determined.

Accuracy
Is done by computing the recovery of sample by the standard addition process.
The recovery of the process is done by three series of injections at variable conc.

Precision
It will be determined by the samples taking in within a days and between two mutuals days.
The result is displayed in terms of relative standard deviation.

**Srinath Nissankarao., et al. (2013)** Developed a UV Spectrophotometric Methods for Aceclofenac Using Hydrotropic Agents, 1M sodium bicarbonate and 1M urea (50:50% v/v) increase the solubility of poorly water-soluble Aceclofenac. It obey’s Beer’s law range of 10-60 µg/ml. Method is validated as per ICH guidlines correlation coefficient of 0.9997. And percentage recovery is from Aceclofenac ranged from 99.8 to 100.2 %.

**Rohit Shah., et al., (2008)** proposed a UVis spectrophotometric process for aceclofenac. It shows an maximum absorption at 273 nm in phosphat buffer pH 7.4. And its obey the Beer’s law and its show good results toward the correlations factor and showed good correlation in phosphte buffer ph-7.4. Linearity 0–20mcg/mL. The method is validated for recovery found more than 99%.

Accuracy
Is done by computing the recovery of sample process. The recovery of the process is done by three series of at variable conc.
Precision

It will be determine by the samples taking in within a days and between two mutuals days.

The result is displayed in terms of reletive standerd devation.

Preporation of standerd sample.

Is done by taking 10miligrems of sample into 100of volumateric flaseks,which is then added of moblie phases make the contant to the level make upto marek.

Preporation of sample soloution

Is done by takeing 20 tabs making into powdered forms by takeing 50mg of sampel to it in a 50mlof volumateric flaseks from which takenoff2ml of which is mixed with mobile phases from which is made upito level so that resulting soloution will becomes 10microgrames per militer conc.

M. C.Sharma., et al .,(2011) Reported the simultaneous determination of Diacerein and Aceclofenac by HPLC method using a the moblie phas conatinig a mixtures of CH$_3$OH:H$_2$O (80.0:20.0 v/v) at the rate of flow is at 1ml per minute by using an 18C-ODS RP-Coloumn (4.60 mm x 25.0 cm, 10.0 µm).

The retantion time of Diacerein and Aceclofenac are to be found at 4.6 mins. and 7.3 mins. respectievelv.

Accuracy

Is done by computing the recovery of sample by the standerd adition process.

The recovery of the process is done by three series of injections at variable conc.

Precission It will be determine by the samples taking in within a days and between two mutuals days.

The result is displayed in terms of reletive standerd devation

Preporation of standerd soloution by taking 10miligrems of sample into 100of volumateric flaseks,which is then added of moblie phases make the contant to the level make upto marek.

Preporation of sample soloution by takeing 20 tabs making into powdered forms by takeing 10mg of sampel to it in a 100mlof volumateric flaseks from which takenoff2ml of which is mixed with mobile phases from which is made
upto level so that resulting solution will becomes 20 microgrames per militer conc.

Santosh Gandhi., et al.,(2010) were reported for Drotaverine hydrochloride and Aceclofenac, by HPLC using CH3OH: 10 mM potassium dihydrogen phosphat buffer ratio of (80:20) is preferred as the solvent used for mobile phas and detection has been passed at 231nm.

Preporation of standerd soloution
Is doen by taking individual 10 miligrams of sample into 100 of volumateric flaseks, which is then added of CH3OH make the contant to the level make upto marek.

Accurecy
Is done by computing the recovery of sample by the standerd adition process.
The recovery of the process is done by three series of injections at variable conc.

Precission It will be determine by the samples taking in within a days and between two mutuals days.