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FORMULATION AND EVALUATION OF LABETALOL HCL FAST DISSOLVING TABLET BY USING FENUGREEK SEED MUCILAGE

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ABSTRACT

Aim: The goal of the present work was to formulation and evaluation of fast dissolving tablet of Labetalol HCl by using fenugreek seed mucilage in combination with different superdisntegrants (like: sodium starch glycolate, Crosspovidine, & Crosscarmellose sodium). **Objectives:** The present work basically focused on to enhance the disintegration of dosage form (to decrease the disintegration time and to achieved rapid onset on action) by using fenugreek seed mucilage that increased the rapid disintegration of tablet with different superdisintegrants and also improved the % cumulative drug release within 30second. **Materials and method:** Mucilage were extracted by using ethyl alcohol (95&%) from fenugreek seed. These isolated mucilage were evaluated for abundant physicochemical properties (like: pH, gelatinization temperature, viscosity swelling index, water absorption index, total microbial load & solubility). FTDs were formulated by using Labetalol HCl, fenugreek seed mucilage, different superdisntegrants(like SSG, CP,CCS)in various concentration by direct compression method. Pre- compression parameters and Post-compression studies (were detected to be within limits. The best formulation F8 had been showed good post compression parameters result in comparition to the other formulation. Accelerated stability study were divulge that all prepared FDTs were stable. **Conclusions:** Thus, the tablet were prepared by using fenugreek seed mucilage revealed the superdisintegrants properties.

KEYWORDS: Labetalol HCl, fenugreek seed mucilage, FDTs, superdisintegrants, disintegration time.

INTRODUCTION

In spite of that, drug administration can be accomplished in various routes, generally oral route is mostly preferable routes due to the reason of case to application.[1,2] Although, this route have one essential pitfall of these dosage form in some cases such as geriatrics and pediatrics patients to arise difficulty swallowing the dosage form by this route. To overcome these difficulties in such patients a special types of drug delivery system (Novel drug delivery system). It is called Fast(FDTs) are evolved.[3] Fast dissolving table generating the great opportunities expanded product life cycle. Fast dissolving tablet are not only stipulated for people who do not swallow the drug or arising troubled in swallowing (mainly in geriatric and pediatric patients) but also stipulated for dynamic person. Fast dissolving tablet are furthermore named as fast disintegrating tablet, melt in mouth tablet, rapid melt tablet, quick dissolving tablet, oro-dispersible tablet or porous tablet etc.[2,3,4]

In this present study, naturally befall polymers like: fenugreek seed mucilage and to solicitation it is used as superdisintegrant along with different concentration of superdisintegrants like crosspovidone, sodium starch glycolate and crosscarmellose sodium for formulation of fast dissolving tablet of Labetalol HCl by direct compression method.[3,7]

MATERIALS AND METHODS

Labetalol HCl was purchased from Dhamtec Pharma and Consultants (A-202, Tirupati Icon, Plot no 4&5, sector -20, kamothe, Navi Mumbai - 410209**.** Sodium starch glycolate, crospovidone, crosscarmellose sodium were purchased from Yarrow chem products, Maharashtra and Mannitol, Orange flavor, Microcrystalline cellulose, Magnesium stearate, talc were purchased from Vigyan kendra and fenugreek seed were purchased from local market (Uttar Pradesh).

Pre-formulation study

Identification of drug by FTIR spectroscopy

Labetalol HCl disc were prepared by press the Labetalol HCl along with potassium bromide (KBr) and spectra between 4000^{-1} to 500^{-1} cm was captured under the operational situation.[4,5] The absorption maximum in spectra captured with substance being examined in position & relative intensity to those in the reference spectrum in table 3.

Melting point

Melting point of the Labetalol HCl was examined by capillary fusion technique; one side of closed capillary filled with API and place downed in to the melting point apparatus.[4]

Physicochemical parameters

Organoleptic properties

The color, odor and taste o the API (Labetalol HCl) were reported by using descriptive phraseology.[4,5,9]

Solubility study

It was very essential to know solubility characteristics of labetalol HCl in aqueous solution, since they must take over some limited aqueous solubility to evoke therapeutic activity.[4,5]

LOD (Loss on drying)[10,11]1gm of sample was accurately weighed and it is transferred in to Stoppard glass shallow weighing bottle and accurately weighed the bottle.

LOD = Initial wt – final wt / Initial wt of substance

Then bottle was transferred in hot air oven and substance was dried at 105°C for 3 hrs.[36]

Determination of ƛ max

The absorption maxima of the standard solution scanned between 200- 400nm region on UV spectrophotometer. The absorption maximum exist with substance being examined in position and relative intensity of those in reference spectrum.[4,5]

Determination of percentage purity of drug[12]

Accurately weigh 25mg of labetalol HCl was dissolved in miniature quantity of methanol and volume was adjusted to 100ml same to prepare standard solution (concentrated of about 250micro gram /milliliter. from this above solution, aliquot part of 3ml was transferred in to 50ml of volumetric flask and make up the final volume along with 50ml of methanol. Absorbance value of these solution were estimate against blank methanol at 300nm by using Shimadzu -17 UV spectrophotometer.

Calibration curve of Labetalol HCl

Preparation of standard graph of Labetatol HCl using phosphate buffer pH 6.8[4,13]

Methods

50mg of labetalol HCl was accurately weighed in to 100ml of volumetric flask and it was dissolved in phosphate buffer pH 6.8. The volume was make up to 100mL to get a concentration of (0.5mg/mL) stock solution 1st. from this 1ml of solution was take out and diluted to 10ml to get a concentration of (25µg/ml) stock solution 2nd.

Scanning of API (Labetalol HCl)

From the stock solution 2nd, 4ml was pullout and the volume was makeup to 10 ml with phosphate buffer pH 6.8 to get concentration of 10µg/ml. ultraviolet scan range was take hold of between the wavelength of 200-400nm. It was displayed the peak at 300nm.[4,5,12]

Calibration curve in phosphate buffer pH6.8

Coming out from standard stock solution 2nd 2,4,6,8 & 10ml were taken out and volume was makeup to 10ml along with phosphate buffer pH 6.8t to gave the concentration of 5,10,15,20 and 25µg/ml.[4,5] Absorbance of the particulars solution were computed against a blank of phosphate buffer pH6.8 at 300nm for Labetalol HCl and the absorbance value gave an out line in table 7 Calibration curve was plotted, API(Labetalol HCl) vs absorbance was given in fig.2.

Determination of drug – superdisintegrants compatibility

FTIR spectroscopy: This study was carried out to estimate compatibility of API with superdisintegrants IR(infrared) spectrum of labetalol HCl was determined by using FTIR (using KBr dispersion method).[15] The base line correction was clone using dried potassium bromide after this spectrum of dried potassium bromide after this spectrum of dried mixture of API & KBr was run followed by API with different types of superdisintegrants using FTIR spectrophotometer.[14,15,16]

Extraction of mucilage from fenugreek seed mucilage[6,7,8]

100gm of fenugreek seed was taken. Washed it with water and dried at room temperature (25°C). Seeds are taken in to 1000ml of beaker and boiled it on heating mental. Mucilage of fenugreek seed releases in water due to boiling. Squeezed it by using muslin cloth. Then filtrate was kept in refrigerator for cooling. In filtrate ethyl alcohol was added (1:1)

Precipitation of mucilage Precipitated mucilage was separated by using muslin cloth. Obtained mucilage was dried in hot air oven. Obtained mucilage powder.[7]

Evaluation of physicochemical properties of extracted fenugreek seed mucilage

Gelatinization temperature[18]: Sample of seed mucilage powder moistened with trace quantity of water and it fill in to capillary tube, time required for swelling to full gelatinization was determined by using melting point apparatus.

Determination of pH: 1% solution pH values were determined by using a digital pH meter.[7]

Viscosity: Viscosity of fenugreek mucilage powder were determined by Ostwald's viscometer.

Swelling index: 10gm of powdered fenugreek seed mucilage was treated with 5ml of distilled water in a graduated cylinder &shaken for every 10 minutes for 1Hrs and allow to stand for few minutes.[18]

Water absorption index: 1gm of powdered mucilage was suspended in to 10ml of distilled water of 30°C in centrifuge tube and stirring for 30 minutes recurrently and then centrifuged at 3000rpm at least for 10 minutes. Then supernatant was pour out and the weight of gel forming was observed.[18]

Water absorption index = bound water (g)/wt of sample (g)×100

Total microbial load of extracted fenugreek seed mucilage[6,7]

The total microbial content is an essential parameter distinct the appropriateness of substance for utilization as an excipients in the pharmaceutical dosage form.[7] The powder were subjected to dry heat sterilization at 180°C for 30 min. Then the mucilage were inoculated on medium and were incubated for 24hrs. Then the colonies were counted by using microbial colony counter.[8]

Formulation of Labetalol HCl FDTs: Labetalol HCl fast dissolving tablet was prepared by using direct compression method by using different types of superdisintegrants along with fenugreek seed mucilage. Separately all ingredients (except granular directly compressible excipients like: magnesium stearate) were passed through # 40 mesh and magnesium stearate

were passed through # 60 mesh. drug (100mg Labetalol HCl), fenugreek seed mucilage and superdisintegrants were weighed accurately and mixed by taking small portion of each in ascending order and then blended to turn steady mixture by using pestle and mortar. In geometrical order the other ingredients were accurately weighed and assorted in table 1.

Table 1: Composition of various Labetalol HCl FDTs with different superdisintegrants.

INGREDIENTS	F1	F2	F3	F4	F5	F6	F7	F8	F9
Labetalol HCl	100	100	100	100	100	100	100	100	100
Fenugreek seed mucilage	4	6	8	4	6	8	4	6	8
Crospovidone	4	6	8	-	-	-	-	-	-
Croscarmellose	-	-	-	4	6	8	-	-	-
Sodium starch glycolate	-	-	-	-	-	-	4	6	8
Microcrystalline cellulose	52	48	44	52	48	44	52	48	44
Talc	5	5	5	5	5	5	5	5	5
Magnesium stearate	5	5	5	5	5	5	5	5	5
Orange flavor	Q.S.	Q.S.	Q.S.	Q.S.	Q.S.	Q.S.	Q.S.	Q.S.	Q.S.
Mannitol	30	30	30	30	30	30	30	30	30
Total weight	200	200	200	200	200	200	200	200	200

Evaluation of pre- compression parameters

Bulk density: Apparent bulk density of powder blend was calculated by pouring towards a lower position a weighed quantity o mixture (blend) in to a graduated cylinder and thus measure volume.[19]

$$\text{Bulk density} = \text{weight of powder} / \text{volume of packing}$$

Tapped density: Tapped density of, containing a known and accurately weigh of API, was determined by placing in to graduated cylinder, after this cylinder (i.e. filled with blend) was tapped by using tapped density apparatus from 10 cm height at 2 second time intervals, continuing tapping until no further alter in volume & time to be noted.[19,20]

$$\text{Tapped density} = \text{weight of powder/tapped volume}$$

Angle of Repose: Angle of repose of powder blend that to be compress was to be estimated by using funnel method.[20] The API and excipient powder blend was allowed to glide through the funnel.[21] the height and radius of pile was calculated by using formula given below:

$$\tan \theta = h/r$$

where; h = height of the pile

r = radius of the pile

Carr's index % compressibility: Carr's index % compressibility is the simplest and most important method for the measurement of free flowing property of powder blend.[19,22] carr's index % compressibility of powder blend was calculated by using formula:

Carr's index = Tapped density – Bulk density /Tapped density ×100

Hausner's ratio: Hausner's ratio of powder blend that to be compressed was calculated by using given formula:

Hausner's ratio = Tapped density /Bulk density

Post-compression evaluation

Hardness test: Force required to break down the each prepared tablet was determined by using Monsanto hardness tester.[23]

Thickness test: Vernier Calliper's is generally used for the estimating the thickness of the prepared fast dissolving tablet of labetalol HCl.[21,22]

Weight uniformity test:[21,23] For this test, take 20 tablet and their weight is accurately determined by individually and inclusively by using digital weighing balance, USP specification for the uniformity of weight is given below in table 2:

Table 2: USP specification for weight uniformity test.

S. NO.	Average weight (mg)	Maximum % difference allowed
1.	130 or less	10%
2.	130-324 mg	7.5%
3.	More than 324 mg	5%

Friability test: This test is used to estimate, loss of weight of prepared tablet in to container due to carrying away of particles from the surface. Friability test is carried out to examine the ability of the tablet to withstand scraping in handling, packaging and transportation; was estimated by using Roche friabilator.[23] Weigh accurately 20 tablets from prepared batch and placed in to Roche friabilator and rotate it 25 rpm at least for 4 minutes.[19,21] Tablet was brushed and reweighed. The % loss in weight was calculated by using this formula:

% Friability = Initial weight – Final weight / Initial weight ×100

Drug content: 5 tablets were taken from each prepared batch and the accurately weighed on digital weighing balance and then powdered it. 10 mg equivalent of the powder was taken it in to beaker and diluted wit distilled water (10ml)and then make up the volume up to 100ml.[23,24] from this 10ml of the solution was taken it another beaker and volume make up to 100ml with distilled water. The absorbance of the solution was measured by using UV spectrophotometer at 300nm.[4,18,20]

Wetting time and water absorbance ratio: Take a piece of tissue paper and folded it in twice and placed it in 6ml distilled water containing Petri disc that have diameter about 5 cm. add small quantity of red dye(i.e. amaranth)in it. Tablet is kept on tissue paper and time required for complete wetting was measured. The weighted tablet was reweighed.[25,26] Water absorption ratio of formulated batch was estimated by using formula:

R(water absorption ratio) = weight of the tablet after absorption – weight of the tablet before absorption/ weight of the tablet before absorption× 100

Disintegration test: This test is performed using an apparatus (USP disintegration apparatus) with distilled water and temperature was maintained at 37±0.5 °C. Take 6 tablets from formulated batch and it was placed in each tube. The time required for complete disintegration of 6 tablet was to be recorded and average is also calculated.[4,18]

Dissolution study: The release rate Labetalol HCl from fast dissolving tablets was determined using United State Pharmacopoeia (USP) dissolution testing apparatus II (paddle method). The dissolution test was accomplished using 900 ml of pH 6.8 buffer, at 37±0.5°C and at 50 rpm. A sample (5 ml) of the solution is evacuated from the dissolution apparatus at orderly interlude for 10 min.[27] The samples are filtered entirely a 0.45µ membrane filter. Absorbance of these solutions is measured at 300 nm using a Shimadzu UV. Cumulative percentage of drug release is calculated using an Equation obtained from a standard curve.[27,28]

Accelerated stability study: The Accelerated stability study of the fast dissolving tablets was executed according to ICH guidelines by storing tablets in stability chamber at 25±20°C and 60±5% relative humidity and 40±20°C and 75±5% Relative humidity for 3 months. The consequences of temperature and time on the physical attributed of the fast dissolving tablet was evaluated for imposed the stability of the formulated formulations. release.

RESULT AND DISCUSSION

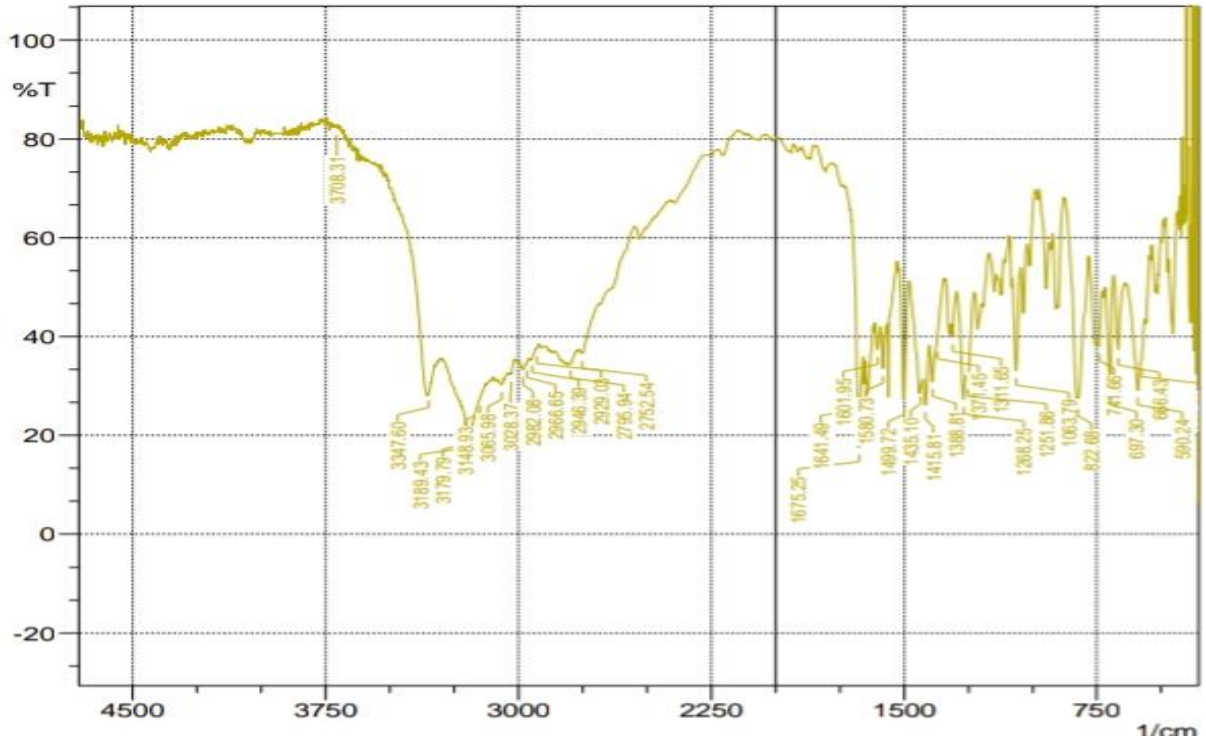

Fig. 1: FTIR Spectrum of Pure drug(Labetalol HCl).

Table 3: FTIR characteristics peak of Labetalol HCl.

Functional group	Standard peak	Characteristics absorption of peak
OH – stretching	3100-3600	3347
NH- stretching	3100-350	3148
Aromatic –CH	2900-3100	2982
Aliphatic –CH	2850-2960	2752
C=O stretching	1650-1700	1675
C=C stretching	1620-1680	1641

By Melting Point

Melting point values of Labetalol HCl was deemed to be the range of 188 to 189°C. The melting point for Labetalol HCl was 188°C. Hence experimental value of Labetalol HCl were in good concurrence with official value.

Organoleptic properties

Table 4: Reported organoleptic properties.

Color	White or off white
Odor	odorless
Taste	Slightly bitter
Nature	Crystalline powder

Solubility study

Table 5: Reported solubility of Labetalol HCl in different solvents.

S. No.	Name of solvents	Solubility	Solubility (µg/ml)
1.	Distilled water	Very soluble	0.9
2.	Acetone	Freely soluble	4
3.	Methanol	Freely soluble	6
4.	Ether	Insoluble	10,000
5	Ethanol(95%)	Soluble	16
6.	Aqueous solution of pH 4and below	Freely soluble	8
7.	pH 7.4 phosphate buffer	Slightly soluble	115

Loss on drying

Table 6: Reported % LOD.

S. No.	Percentage LOD
1.	0.3
2.	0.5
3.	0.4

Determination of λ max.: The absorption maximum for Labetalol HCl in 6.8pH Phosphate buffer was deemed to b 300nm.

Calibration curve for Labetalol HCl

Standard calibration curve of Labetalol HCl in phosphate buffer pH6.8

Standard calibration curve of Labetalol HCl in phosphate buffer pH6.8 was drown by plotting absorbance v/s concentration. The absorbance values are systemized in Table 7. Standard calibration curve of Labetalol HCl in the Beer's range between 5-25µg/ml is show in fig.2.

Table 7: Standard calibration curve for Labetalol HCl in 6.8pH phosphate buffer at 300nm.

S. No.	Concentration(µg/ml)	Absorbance
1.	5	0.132
2.	10	0.234
3.	15	0.335
4.	20	0.421
5.	25	0.521

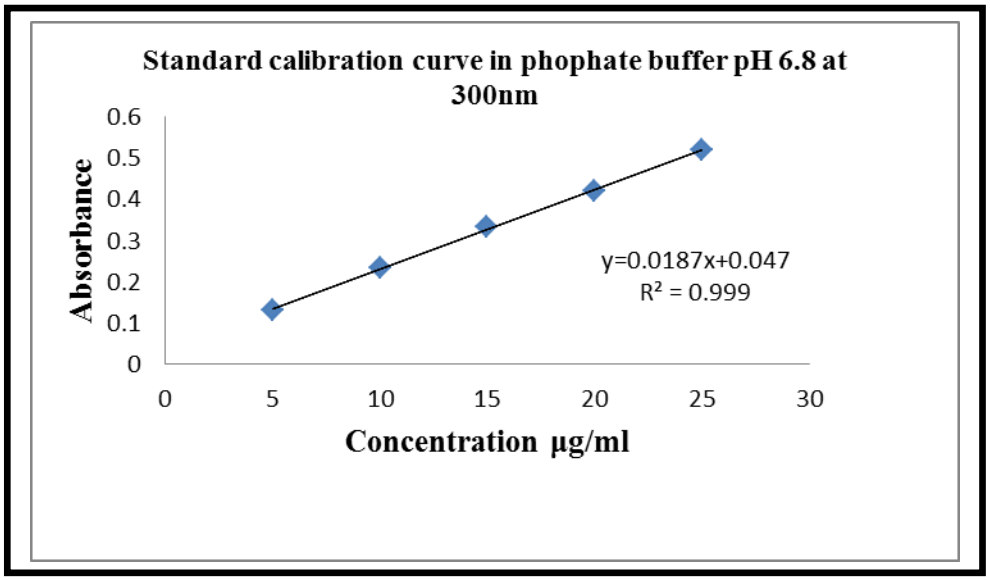

Fig. 2: Standard calibration curve for Labetalol HCl.

S.NO.	Parameter	Values
1.	Correlation coefficient	0.999
2.	Slope	0.0187
3.	Intercept	0.047

Percentage(%) purity of Labetalol HCl

The percentage purity of drug (Labetalol HCl) was calculated by using calibration graph method (least square method).

S.NO.	Percentage(%)Purity	Average % Purity
1.	98.21	99.18±0.53
2.	99.09	
3.	99.45	

Drug and excipient compatibility study

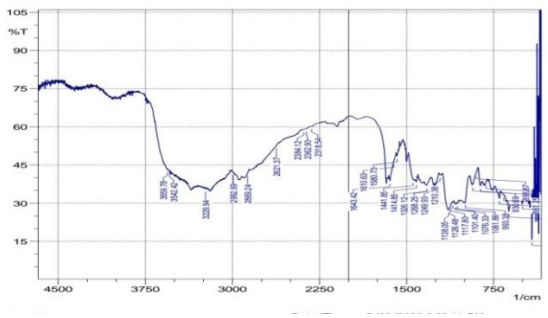

Fig. 3: Labetalol HCl +SSG.

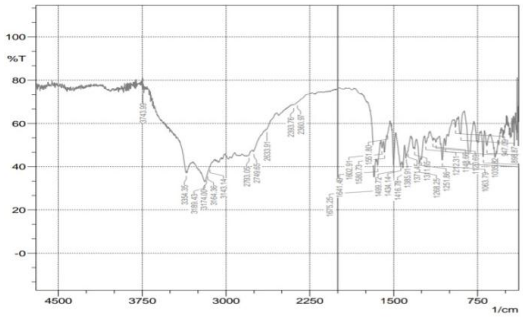

Fig. 4: Labetalol HCl +CCS.

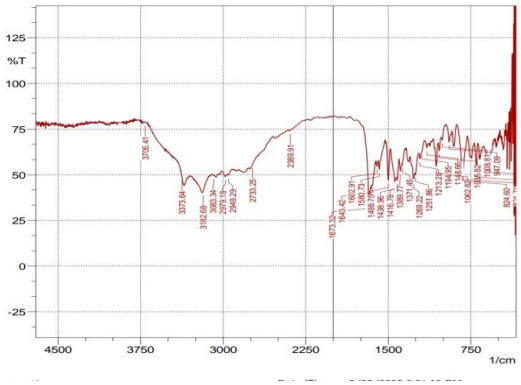

Fig. 5: Labetalol HCl+CP.

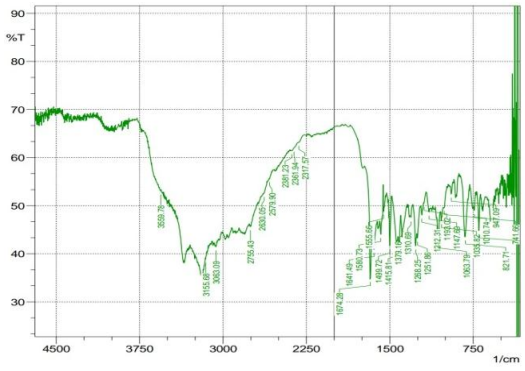

Fig. 6: Labetalol HCl+ mucilage.

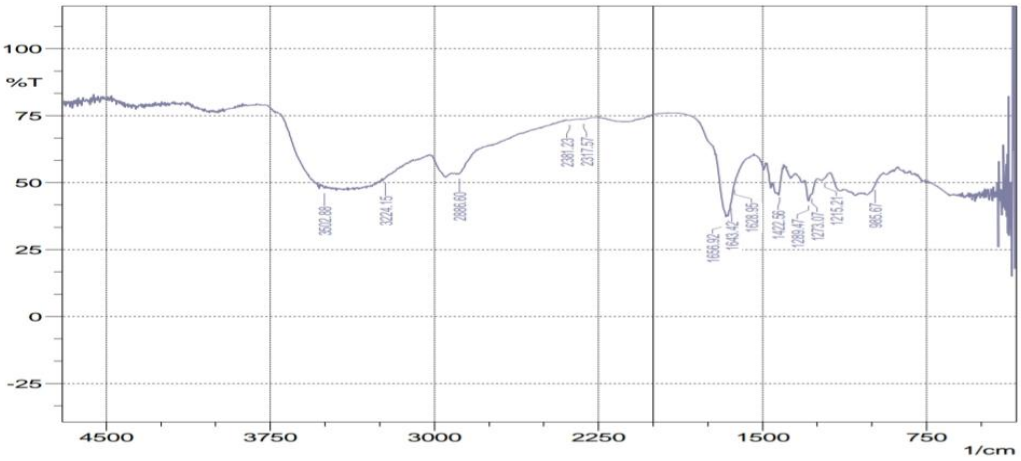

Fig. 7: Labetalol HCl+ All excipients.

Table 8: Physicochemical properties of extracted fenugreek seed mucilage.

Properties	Reported
Solubility	Soluble in water,ethyl alcohol
pH	7.42±0.3
Gelatinization temperature	220±0.5°C
Swelling index	50%
Total microbial load	8-9 colony
Water absorption ratio	50%
Viscosity(1%)	286±0.5pa-s

Table 9: Pre compression parameters of prepared granules of all formulation batch.

Formulation code	Angle of repose(θ) ±SD	Bulk density(g/ml) ±SD	Tapped density(g/ml) ±SD	Carr's index ±SD	Hausner's Ratio ±SD	Powder blend characteristics
F1	28.42±0.5	0.583±0.5	0.636±0.5	8.34±0.5	1.09±0.2	Excellent
F2	24.63±0.3	0.561±0.6	0.621±0.2	9.66±0.3	1.10±0.5	Excellent
F3	32.34±0.1	0.543±0.3	0.606±0.3	10.39±0.3	1.11±0.3	Very good
F4	26.40±0.4	0.581±0.5	0.619±0.2	6.14±0.2	1.06±0.2	Excellent

F5	24.30±0.3	0.579±0.3	0.618±0.6	6.31±0.5	1.06±0.5	Excellent
F6	25.45±0.2	0.547±0.3	0.621±0.2	11.9±0.6	1.13±0.5	Excellent
F7	28.42±0.1	0.580±0.5	0.617±0.3	5.9±0.3	1.06±0.5	Excellent
F8	31.4±0.3	0.550±0.5	0.602±0.5	8.6±0.3	1.09±0.2	Very good
F9	29.56±0.3	0.552±0.2	0.617±0.1	10.5±0.2	1.11±0.2	Excellent

±SD = standard deviation, (n=3)

Table 10: Post -compression parameters of prepared Fast dissolving tablets of all formulation batch.

Formulation code	F1	F2	F3	F4	F5	F6	F7	F8	F9
Hardness(Kg/cm^2) ±SD	2.9±0.05	3.3±0.08	2.8±0.02	2.1±0.01	2.8±0.05	3.2±0.06	2.9±0.02	2.9±0.03	2.9±0.02
Thickness (mm) ±SD	3.15±0.01	3.12±0.02	3.13±0.02	3.13±0.01	3.14±0.02	3.15±0.03	3.15±0.02	3.13±0.04	3.14±0.02
Diameter (mm) ±SD	8±0.02	8±0.03	8±0.02	8±0.01	8±0.02	8±0.03	8±0.01	8±0.02	8±0.02
Drug content(%)	96.21	96.39	96.42	96.34	96.51	96.49	96.34	97.45	95.98
Weight variation(mg) ±SD	198.01±0.3	199.02±0.4	200.01±0.3	198.03±0.2	199.05±0.1	200.01±0.2	200.03±0.3	199.04±0.2	201.01±0.3
Friability(%)±SD	0.34±0.2	0.42±0.3	0.52±0.4	0.36±0.5	0.49±0.3	0.39±0.6	0.55±0..3	0.23±0.2	0.52±0.7
Wetting time(sec.) ±SD	52±0.5	29±0.5	68±0.3	35±0.4	20±0.5	75±0.3	28±0.5	14±0.7	25±0.3
Water absorption ratio(%)±SD	40.26±0.3	52.30±0.3	63.56±0.5	59.75±0.3	60.78±0.4	52.38±0.5	54.36±0.5	64.20±0.3	62.47±0.3
Disintegration time(sec.) ±SD	65±0.2	35±0.3	29±0.5	40±0.3	62±0.2	71±0.3	25±0.4	18±0.3	20±0.5
% drug release in 5 min. ±SD	62.98±0.8	79.25±0.5	90.25±0.3	93.25±0.3	95.02±0.2	96.72±0.8	96.88±0.5	97.98±0.6	96.92±0.5

±SD = standard deviation, (n=3)

Table 11*: In- vitro* dissolution profile of all formulation at 7.4 pH (saliva medium).

Time in min.	F1	F2	F3	F4	F5	F6	F7	F8	F9
0	0	0	0	0	0	0	0	0	0
1	1.56	2.09	2.11	1.36	1.98	2.32	2.65	2.6	2.53
2	1.97	2.34	2.67	2.56	2.45	2.09	3.12	2.43	4.41
3	2.63	3.45	3.30	3.48	3.68	3.79	4.32	3.98	5.13
4	3.40	4.19	4.41	5.00	4.12	4.86	5.34	5.74	6.09
5	4.12	4.56	4.98	5.13	5.45	6.35	6.65	6.56	6.44

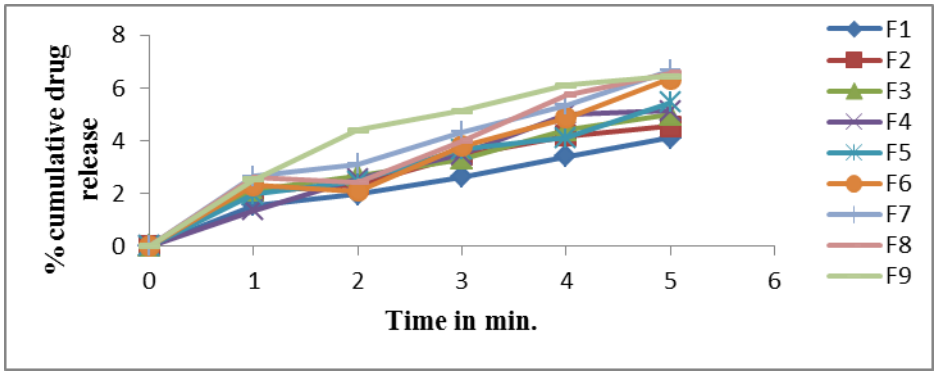

Fig. 8: *In- vitro* dissolution profile of all formulation at 7.4 pH (saliva medium).

Table 12: *In- vitro* dissolution profile of formulation in 0.1N HCl.

Time in min.	F1	F2	F3	F4	F5	F6	F7	F8	F9
0	0	0	0	0	0	0	0	0	0
1	32.34	46.26	59.48	56.380	57.72	58.58	55.82	59.56	58.24
2	38.94	52.32	65.58	63.58	69.63	71.45	78.72	78.36	77.32
3	42.62	68.81	78.20	79.76	86.54	83.42	84.55	86.42	87.56
4	55.56	70.72	85.38	88.86	90.32	92.32	93.72	94.29	93.32
5	62.98	79.25	90.1	93.25	95.02	96.72	96.88	97.98	96.92

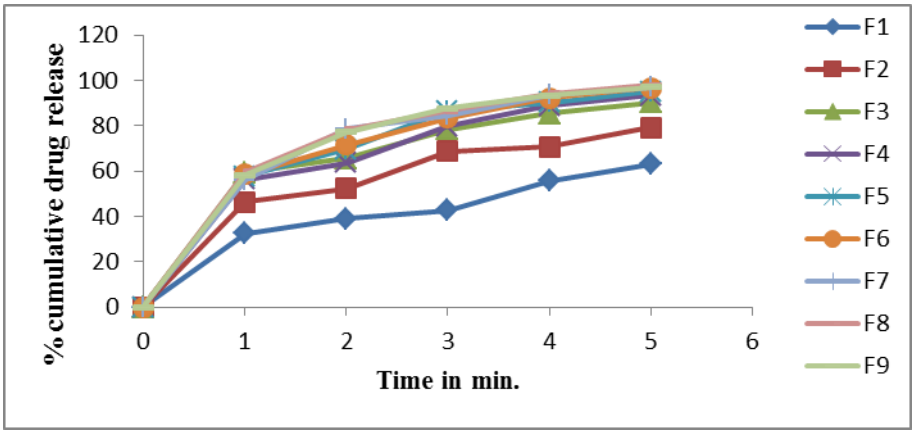

Fig. 9: *In- vitro* dissolution profile of all formulation in 0.1N HCl.

Accelerated stability study

The fast dissolving tablet F8 a& F9 containing Labetalol HCl which exhibit good in vitro attainment were subjected to accelerated stability study.[26,27] These studies were performed by investigating the outcome of temperature on the physical properties of the fast dissolving tablet and drug release from the FDTs.[28] The result, thus specified that were no detectable and physical change found in the FDT afterword storage.

Table 13: Stability study for two best Formulation stored at 40°C/75% RH.

Time	Hardness Kg/cm^2 (±SD)		Friability (%)(±SD)		Disintegration time (sec.) (±SD)		Drug content (%)(±SD)		*In-vitro* drug release (%CDR) (±SD)	
	F8	F9	F8	F9	F8	F8	F9	F8	F9	F8
15 days	3.02±0.2	2.99±0.3	0.24±0.5	0.54±0.3	18±0.3	20±0.2	97.45±0.3	95.98±0.2	97.98±0.5	96.92±0.4
30 days	3.00±0.3	2.98±0.4	0.23±0.3	0.55±0.4	19±0.2	21±0.3	97.43±0.3	95.97±0.4	97.80±0.2	96.72±0.3
45 days	3.06±0.3	2.99±0.1	0.24±0.2	0.52±0.3	18±0.5	20±0.4	97.44±0.5	95.96±0.3	97.71±0.3	96.68±0.3
60 days	3.07±0.4	2.98±0.4	0.23±0.3	0.53±0.3	19±0.2	22±0.5	97.44±0.3	95.96±0.3	97.62±0.4	96.61±0.5

CONCLUSION

It was deduced that, Labetalol HCl can be auspiciously formulated as fast dissolving tablet by using fenugreek seed mucilage along with various superdisintegrants (such as: SSG, CCS & CP) in disparate concentration by direct compression method. The formulation enduring batch F8 as inaugurate to be superlative than other prepared batch formulation in appellation of disintegration time and % cumulative drug release.

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