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FORMULATION AND EVALUATION OF CHEWABLE TABLETS OF RALTEGRAVIR POTASSIUM

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Abstract:
The present study was undertaken to formulate and evaluate Raltegravir potassium chewable tablets using different superdisintegrants to identify an optimized formulation with satisfactory physicochemical properties and improved in vitro drug release. Nine formulations (F1–F9) were prepared using Primojel, Ac-Di-Sol, and crospovidone at different concentrations. The prepared powder blends were evaluated for pre-compression parameters, including angle of repose, bulk density, tapped density, Carr's index, and Hausner's ratio. The formulated chewable tablets were evaluated for physical appearance, average weight, hardness, friability, thickness, drug content, disintegration time, wetting time, and in vitro drug release. The calibration curve of Raltegravir potassium was prepared in pH 6.8 phosphate buffer containing 0.25% sodium lauryl sulfate (SLS), demonstrating good linearity with a reported coefficient of determination of approximately 0.998. The drug content of the prepared formulations ranged from 96.25% to 99.36%, while hardness ranged from 4.15 to 4.96 kg/cm² and friability ranged from 0.22% to 0.86%. The disintegration time ranged from 21 to 52 seconds, and the wetting time ranged from 30 to 59 seconds. Among the nine formulations, F3 containing Primojel was identified as the optimized formulation based on the reported evaluation results. It exhibited a disintegration time of 21 seconds, a wetting time of 30 seconds, and a maximum in vitro drug release of 98.12% at 45 minutes. FTIR analysis of the pure drug and optimized formulation did not indicate any apparent drug–excipient incompatibility based on the reported observations. Overall, the results suggest that the F3 formulation demonstrated promising physicochemical characteristics, rapid disintegration, and improved in vitro drug release compared with the other formulations investigated. Further stability studies and additional evaluations are recommended to establish the long-term stability and suitability of the optimized formulation.

Keywords: *Raltegravir potassium, chewable tablets, superdisintegrants, Primojel, Ac-Di-Sol, crospovidone, pre-compression parameters, in vitro drug release, FTIR analysis.*

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INTRODUCTION:

Oral route is most preferred route of administration due to its ease of administration, Patient compliance, Patient acceptance, accurate dosing and its cost effectiveness. The research on oral dosage forms is currently focused on improving the palatability and easy of administration especially in case of children and elderly patients.[1] Chewable tablets which are needed to be broken masticated in between the teeth before ingestion. These tablets are given to the children who have difficulty swallowing and to the grown-ups who dislike swallowing. These tablets are intended to disintegrate easily in mouth at a moderate rate either with or without factual chewing characteristically chewable tablets have a smooth texture upon decomposition, are affable tasting and leave no bitter or unwelcome taste.[2]

These tablets are given to the children who have difficulty in swallowing and to the adults who dislikes swallowing. Chewable tablets have emerge as a promising alternative to address these limitations, offering improved patient acceptability, faster drug absorption enhance therapeutic efficacy. Chewable tablets are allowing for pre- gastric absorption and improved dissolution of active pharmaceutical ingredients. These tablets are particularly beneficial for pediatric and geriatric patients, as well as individuals with dysphagia, a condition that affects the ability to swallow solid dosage forms.[3]

Micronized and submicron forms of therapeutically and physiologically active substances increasingly being incorporated into tablet formulations to take advantage of the improved absorption properties of these forms. They are also used in the administration of antacids and carminative. Mannitol is widely used as an excipient in chewable tablets due to its non-hygroscopic properties for moisture-sensitive drugs. Successful development of a tablet formulation requires careful selection of ingredients to create a robust solid dosage form. Selection of appropriate excipients to perform specific functions in tablet formulations. Both natural and synthetic sweeteners are types of functional Excipients commonly used in the formulation of chewable tablets to mask unpleasant tastes and facilitate administration to children.



Fig: Chewable Tablets

Ideal Characteristics of chewable tablets

1. Easy to chew
2. Appropriate size & shape.
3. Dosage form that do not require water
4. Easy to take on the go.
5. Convenient to take, anywhere & at any time.
6. Palatable
7. Improve consistency.
8. Tasty and comes in a variety of flavors.
9. Are simple & helpful to take.
10. Reduce risk of drug induced esophagitis.
11. Are provided as a single dose so no estimating is required.
12. Easy to swallow even for people who have difficulty swallowing regular tablets & capsules.[4]

Advantages

1. Better absorption characteristics.
2. Patient convenience.
3. Improved understanding acknowledgment through lovely taste.
4. Child friendly version.
5. Improves bioavailability by spoilage.
6. Stimulates to saliva in mouth.
7. Enhancing bioavailability by coming about because of expanded ingestion rate, because of its disintegration or being bitten in the mouth into the dissolution.
8. Suitable for bedridden people, disabled people, travelers, busy peoples etc. who do not have water every time.[5]

Disadvantages

1. Bitter tasting drugs are not used for formulation of chewable tablets.
2. Chewing of chewable tablets for long time can lead to facial muscle soreness.
3. Chewable tablets require proper packaging for stable drug safety and stability.
4. The use of more quantity of flavor enhancing agent in chewable tablet may cause ulcer in the oral cavity.
5. The number of chewable tablets is hygroscopic in nature, so they are keptin dry place with correct packaging.
6. Sweeteners like sorbitol can cause diarrhea and sucrose can cause tooth decay.
7. If not properly formulated, it may leave an unpleasant taste in the mouth.[6]

Need for Development of Chewable Tablet

- Improved patient compliance: Ideal for pediatric, geriatric, and dysphagic patients who have difficulty swallowing conventional tablets.
- Ease of administration: Can be taken without water, making them convenient for on-the-go use.
- Faster onset of action: Chewing breaks the tablet into smaller particles, increasing surface area and enhancing drug dissolution.
- Better palatability: Taste-masking techniques and flavors improve patient acceptance, especially for bitter drugs.
- Flexible formulation: Allows incorporation of sweeteners, flavors, and directly compressible excipients.
- Reduced risk of choking: Safer compared to swallowing intact tablets.
- Improved bioavailability (in some cases): Pre-dispersed drug may enhance absorption. [7-8]

Materials or excipients used in chewable [9-10]

Chewable tablets are designed to be chewed in the mouth before swallowing, requiring a unique combination of excipients to ensure palatability, mechanical strength, rapid disintegration, and patient acceptability. Each excipient category plays a specific functional role in formulation.

1. Diluent/ Chewable base
2. Disintegrant
3. Binder
4. Anti-capping agent
5. Sweetener
6. Tastes masking agent
7. Glidant
8. Lubricant
9. Colorant

METHODOLOGY:

Buffer preparation:

Preparation of 0.2 M Potassium dihydrogen orthophosphate solution: Accurately weighed 27.128 gm of monobasic potassium dihydrogen orthophosphate was dissolved in 1000 ml of distilled water and mixed.

Preparation of 0.2 M sodium hydroxide solution: Accurately weighed 8 gm of sodium hydroxide pellets were dissolved in 1000 mL of distilled water and mixed.

Preparation of pH 6.8 phosphate buffer + 0.1% SLS: Accurately measured 250 mL of 0.2 M potassium dihydrogen orthophosphate and 112.5 mL of 0.2 M NaOH was taken into the 1000 mL volumetric flask. Volume was made up to 1000 mL with distilled water and add 1g of Sodium lauryl sulfate and sonicated to dissolve.

Analytical method development for Raltegravir potassium:

a) Determination of absorption maxima

A spectrum of the working standards was obtained by scanning from 200-400 nm against the reagent blank to fix absorption maxima. The λmax was found to be 328 nm. Hence all further investigations were carried out at the same wavelength.

b) Construction of standard graph

100 mg of Raltegravir potassium was dissolved in 100 mL of pH 6.8 phosphate buffer + 0.1% SLS to give a concentration in 1mg/mL (1000µg/mL) 1 ml was taken and diluted to 100 ml with pH 6.8 phosphate buffer + 0.1% SLS to give a concentration of 0.01 mg/ml (10µg/ml). From this stock solution aliquots of 1.0 ml, 2.0ml, 3.0 ml, 4.0 ml, 5 ml, were pipette out in 10 ml volumetric flask and volume was made up to the mark with pH 6.8 phosphate buffer + 0.1% SLS to produce concentration of 10, 20, 30, 40 and 50µg/ml respectively. The absorbance of each concentration was measured at respective (λmax) i.e., 328 nm.

Formulation development:

All the ingredients including drug and diluents were weighed accurately and triturated individually in a mortar and passed through #60 sieve. All these ingredients were mixed thoroughly by adding in geometric ratio. The blend material was lubricated with magnesium stearate. The mixture was compressed by rotary tablet compression machine, 12 stations from Punching machine. The composition and weight of tablets was as given in the Table 7.1. Different batches based on the variation in composition were from F1 to F9.

Table 7.1 : Formulation table showing various compositions

INGREDIANTS	FORMULATIONS								
	F1	F2	F3	F4	F5	F6	F7	F8	F9
Raltegravir potassium	400	400	400	400	400	400	400	400	400
Primojel	50	100	150	-	-	-	-	-	-
Ac-di-Sol	-	-	-	50	100	150	-	-	-
Cross povidone	-	-	-	-	-	-	50	100	150
Aspartame	8	8	8	8	8	8	8	8	8
Magnesium stearate	4	4	4	4	4	4	4	4	4
Mannitol	10	10	10	10	10	10	10	10	10
Vanilla flavor	5	5	5	5	5	5	5	5	5
Lactose	Q.S	Q.S	Q.S	Q.S	Q.S	Q.S	Q.S	Q.S	Q.S
Total weight	700	700	700	700	700	700	700	700	700

Evaluation of tablets:

Pre compression parameters:

Measurement of Micromeritic properties of powders

1. Angle of repose

The angle of repose of API powder is determined by the funnel method. The accurately weighed powder blend is taken in the funnel. The height of the funnel is adjusted in a way that the tip of the funnel just touched the apex of the powder blend. The powder blend is allowed to flow through the funnel freely on o the surface. The diameter of the powder cone is measured and angle of repose is calculated using the following equation.

$\tan \Theta = h/r$ ……(1)

Where , h and r are the height and radius of the powder cone.

Table 7.2 : Flow Properties and Corresponding Angle Of Repose

Flow Property	Angle of Repose (^{0})
Excellent	25-30
Good	31-35
Fair- aid not needed	36-40
Passable-may hang up	41-45
Poor-must agitate, Vibrate	46-55
Very Poor	56-65
Very, very Poor	>66

2. Bulk density

The powder sample under test is screened through sieve No.18 and the sample equivalent to 25 gm is weighed and filled in 100 ml graduated cylinder and the powder is leveled and the unsetled volume, V_0 is noted. The bulk density is calculated in g/cm^3 by the formula.

Bulk density = M/V_0 ……. (2)

V_0 = apparent unstirred volume

M= Powder mass

3. Tapped density

The powder sample under test is screened through sieve No. 18 and the weight of the sample equivalent to 25 gm filled in 100ml graduated cylinder. The mechanical tapping of cylinder is carried out using tapped density tester at a nominal rate for 500 times initially and the tapped volume V_0 is noted. Tappings are proceeded further for an additional tapping 750 times and tapped volume, V_b is noted. The difference between two tapping volume is < 2%, V_b is considered as a tapped volume V_f. The tapped density is calculated in g/cm^3 by the formula.

Tapped density = M/V_f …… (3)

M = weight of sample powder taken

V_f = Tapped volume

4. **Compressibility index**

The compressibility index of the powder blend is determined by Carr's index to know the flow character of a powder. This formula for Carr's index is as below :

Carr's Index (%) = [(TD-BD)/TD] x100 …… (4)

5. Hausner's ratio

The Hausner's ratio is a number that is correlated to the flowability of a powder or granular material. The ratio of tapped density to bulk density of the powders is called the Hausner's ratio. It is calculated by the following equation.

H = Pt / ρB ……..(5)

where ρT= tapped density, ρB = bulk density

Table 7.3 : Scale of Flowability

Compressibility index (%)	Flow character	Hausner Ratio
≤ 10	Excellent	1.00-1.11
11-15	Good	1.12-1.18
16-20	Fair	1.19-1.25
21-25	Passable	1.26-1.34
26-31	Poor	1.35-1.45
32-37	Very Poor	1.46-1.59
> 38	Very, very Poor	> 1.60

Post compression parameters:

a) Thickness

The thickness of the tablets was determined by using Digital micrometer. 10 individual tablets from each batch were used and the results averaged.

b) Weight variation

Twenty tablets were randomly selected from each batch and individually weighed. The average weight and standard deviation 3 batches were calculated. It passes the test for weight variation test if not more than 2 of the individual tablet weights deviate from the average weight by more than the allowed percentage deviation and none deviate by more than twice the % shown. It was calculated on an electronic weighing balance.

c) Friability

The friability values of the tablets were determined using a Roche-friabilator. Accurately weighed six tablets were placed in The Roche friabilator and rotated at 25 RPM for 4 min. Percentage friability was calculated using the following equation.

Friability = ($[w_0-w]/w_0$) x 100

Where w_0 = weight of tablet at time zero before revolution.

w = weight of the tablet after 100 revolutions

d) Drug content

The content of drug carried out by 5 randomly selected tablets of each formulation. The 5 tablets were grinded to get powder; this powder was dissolved in pH 6.8 phosphate buffer + 0.1% SLS by sonication for 30 min and filtered through filter paper. The drug content was analyzed spectrophotometrically at 328 nm using UV spectrophotometer. Each measurement was carried out in triplicate and the average drug content was calculated.

e) Disintegration test

Six tablets were taken randomly from each batch and placed in USP disintegration apparatus baskets.

Apparatus was run for 10 min. and the basket was lift from the fluid, observe whether all of the tablets have disintegrated.

f) Wetting Time: A glass Petridish was partially filled with water and tablet was placed on the surface of a band of filter paper supported on a glass slide. The uptake of pH 6.8 phosphate buffer + 0.1% SLS occurred from lower surface of the tablet. Time required for water to reach the center of upper surface of tablet was noted as wetting time.

g) Dissolution test of Selegiline

Drug release from Selegiline tablets was determined by using dissolution test USP 24 type II (paddle). The parameters used for performing the dissolution were pH 6.8 phosphate buffer + 0.1% SLS medium as the dissolution medium of quantity 900 ml. The whole study is being carried out at room temperature of 37˚ C and at a speed of 75 RPM.

5 ml aliquots of dissolution media were withdrawn each time intervals (5, 10, 15, 20, 30 and 45 min) and appropriate dilution by UV spectrophotometer. The concentration was calculated using standard calibration curve.

Drug-Excipients compatibility studies:

Drug excipients compatibility studies were carried out by mixing the drug with various excipients in different proportions (in 1;1 ratio were to have maximum likelihood interaction between them) was placed in a vial, and closed with rubber stopper and sealed properly. Fourier Transform Infrared Spectroscopy (FTIR) studies were performed on drug, optimized formulation using Bruker FTIR. The samples were analyzed between wave numbers 4000 cm^{-1} and 550 cm^{-1}.

RESULTS AND DISCUSSION:

Preparation of calibration curve of Raltegravir potassium:

The regression coefficient was found to be 0.998 which indicates a linearity with an equation of y=0.011 x-0.008. Hence Beer-Lambert's law was obeyed.

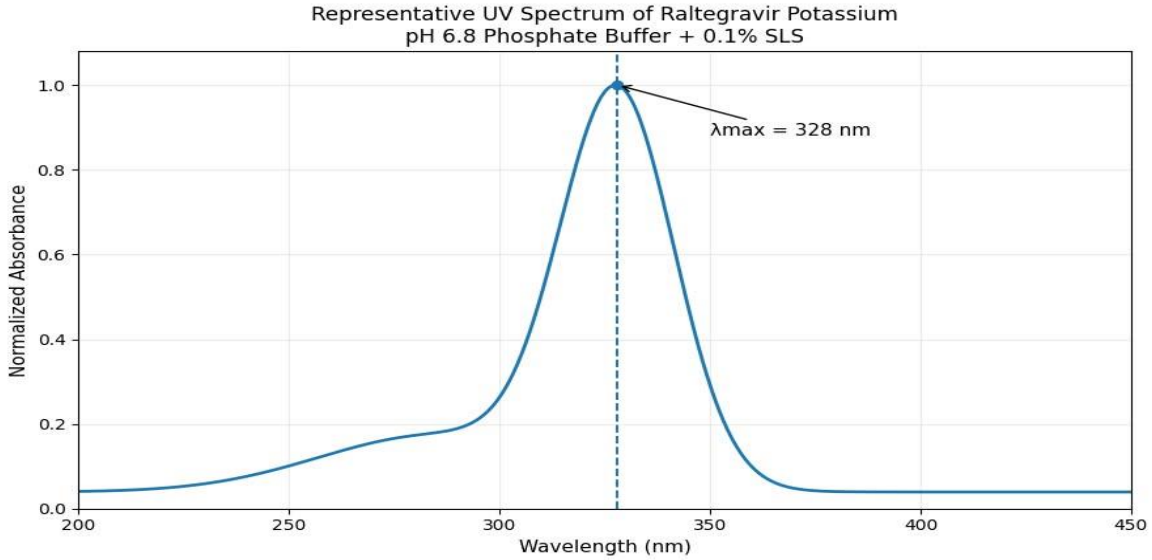


FIG 8.1: UV spectrum of Raltegravir potassium in pH 6.8 phosphate buffer + 0.1% SLS

Table 8.1: Calibration curve data of Raltegravir potassium in pH 6.8 phosphate buffer + 0.1% SLS

Concentration	Absorbance
0	0
10	0.131
20	0.229
30	0.354
40	0.461
50	0.568

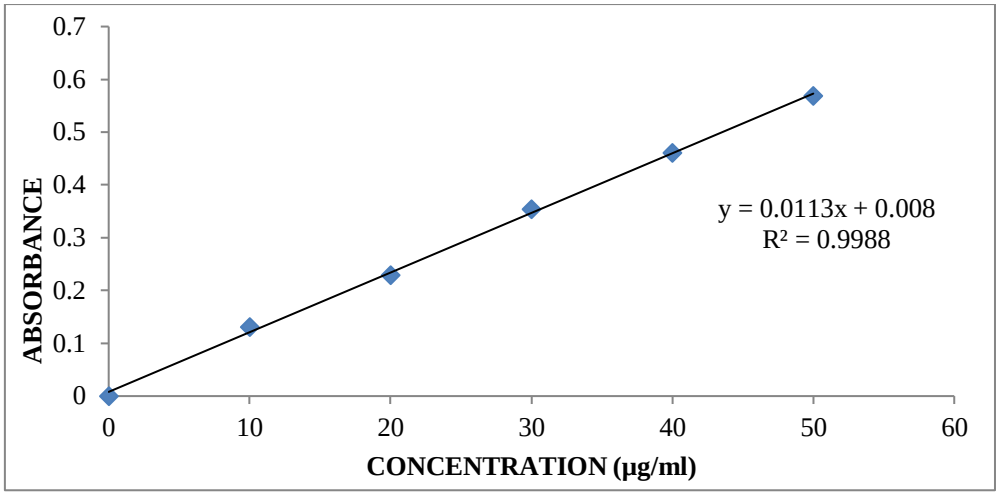


FIG 8.: Calibration curve data of Raltegravir potassium in pH 6.8 phosphate buffer + 0.1% SLS

EVALUATION OF PRE-COMPRESION PARAMETERS OF POWDER BLEND

Table 8.2: Evaluation of pre-compression parameters of powder blend

Formulation code	Angle of repose	Bulk density(gm/mL)	Tapped density (gm/mL)	Carr's index (%)	Hausner's ratio
F1	26.20±0.32	0.465±0.026	0.523±0.034	11.08±0.44	1.12±0.05
F2	21.77±0.34	0.492±0.038	0.585±0.042	15.89±0.36	1.18±0.06
F3	20.81±0.41	0.437±0.015	0.534±0.034	18.16±0.57	1.22±0.04
F4	23.25±0.53	0.435±0.042	0.526±0.021	17.30±0.46	1.20±0.11
F5	21.46±0.34	0.423±0.010	0.515±0.025	17.86±0.49	1.21±0.07
F6	25.78±0.32	0.474±0.042	0.554±0.041	14.44±0.65	1.16±0.08
F7	24.86±0.44	0.456±0.019	0.543±0.037	16.02±0.64	1.19±0.14
F8	25.60±0.32	0.461±0.026	0.565±0.023	18.40±0.76	1.22±0.004
F9	22.45±0.38	0.459±0.017	0.545±0.027	15.77±0.47	1.18±0.02

- For each formulation blend of drug and excipients were prepared and evaluated for various pre compression parameters described earlier in methodology chapter.
- The bulk density of all formulations was found in the range of 0.423±0.010 - 0.492±0.038 and tapped density was in the range of 0.515±0.025 - 0.585±0.042.
- The Carr's index and Hausner's ratio was calculated from tapped density and bulk density.

EVALUATIONS OF POST COMPRESSION PARAMETERS OF RALTEGRAVIR POTASSIUM CHEWABLE TABLETS

Table 8.3: Evaluation of post compression parameters of Raltegravir potassium Chewable Tablets

Formulation codes	Physical appearance	Average weight(mg)	Hardness (kg/cm^2)	Friability (%loss)	Thickness (mm)	Drug content (%)	*In vitro* disintegration Time (sec)	Wetting time (sec)
F1	White colour	98.36	4.32	0.52	3.14	98.15	45	50
F2	White colour	97.25	4.96	0.33	3.65	96.52	36	46
F3	White colour	99.54	4.15	0.49	3.28	99.36	21	30
F4	White colour	98.25	4.87	0.86	3.49	98.47	52	56
F5	White colour	99.80	4.33	0.62	3.96	99.12	50	59
F6	White colour	95.82	4.61	0.41	3.47	97.86	34	46
F7	White colour	96.39	4.82	0.22	3.22	98.72	40	43
F8	White colour	98.72	4.95	0.48	3.41	96.25	35	40
F9	White colour	97.28	4.25	0.34	3.96	97.85	26	35

Weight variation and Thickness: All the formulations were evaluated for uniformity of weight using electronic weighing balance and the results are shown above. The average tablet weights of all the formulations were noted down.

Hardness and friability: All the Chewable Tablets formulations were evaluated for their hardness using Monsanto hardness tester and the results are shown above. The average hardness for all formulations was found to be between (4.15- 4.96) kg/cm^2 which was found to be acceptable. Friability was determined to evaluate the ability of the tablets to with stand the abrasion during packing, handling and transporting. All the Chewable Tablets formulations were evaluated for their percentage friability using Roche friabilator and the results are shown above. The average percentage friability for all the formulations was between 0.22 – 0.86 which was found to be within the limit.

Drug content: All formulations were evaluated for drug content according to the procedure described in methodology section and the results were shown above. The assay values for all formulations were found to be in the range of (96.25-99.36). According to IP standards the tablets must contain not less than 95% and not more than 105% of the stated amount of the drug. Thus, all the Chewable Tablets formulation complies with the standards given in IP.

***In vitro* disintegration time:** *In vitro* disintegration studies showed from 21-62 sec. The F3 formulation showed very less *in vitro* disintegration time i.e.21 sec.

Wetting time (sec): Wetting time studies showed from 30-59 sec. The F3 formulation showed very less *in* Wetting time i.e.30 sec.

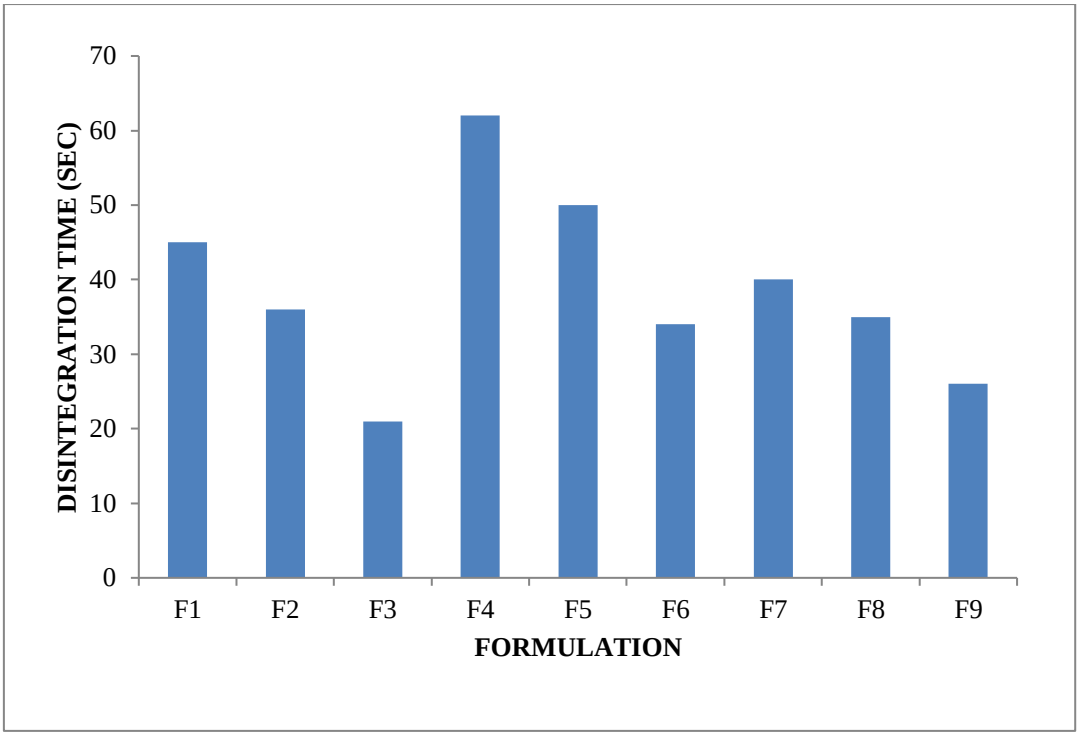


Figure 8.3: *In vitro* disintegration time

***IN VITRO* DRUG RELEASE SYUDIES OF RALTEGRAVIR POTASSIUM:**

Table 8.4: *In vitro* Dissolution data of Raltegravir potassium

Time (mints)	F1	F2	F3	F4	F5	F6	F7	F8	F9
0	0	0	0	0	0	0	0	0	0
5	23.62	32.91	43.33	37.15	29.10	29.68	35.63	28.62	29.14
10	35.11	41.63	53.75	45.20	45.81	38.92	52.64	35.11	37.51
15	47.25	54.28	75.85	57.38	58.99	46.58	58.25	48.89	49.28
20	59.41	65.15	82.54	79.82	67.38	58.28	68.14	56.75	57.61
30	67.37	68.82	88.76	86.73	74.87	65.96	81.36	72.35	66.25
45	73.85	89.65	98.12	95.19	86.56	72.48	94.24	81.22	72.14

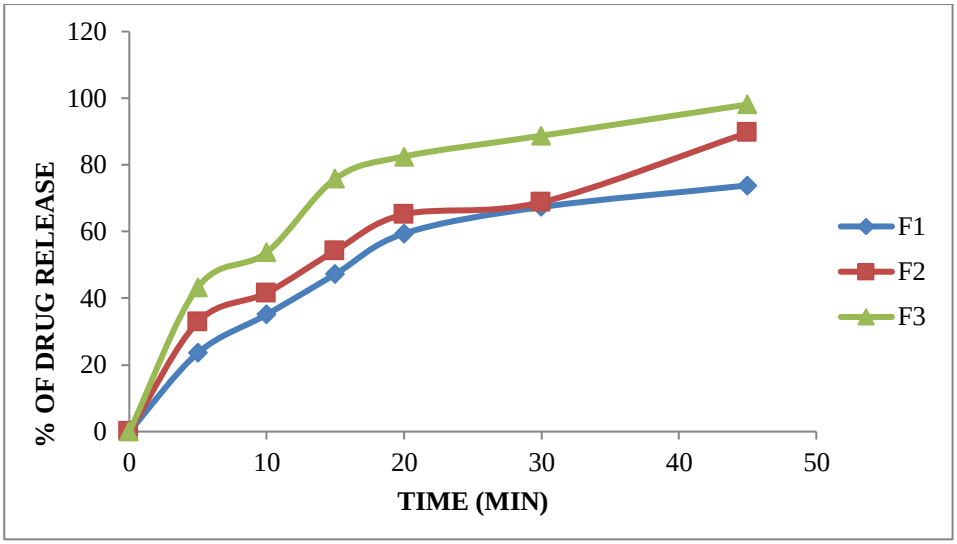


Fig 8.4: Dissolution profile of formulations F1, F2, F3

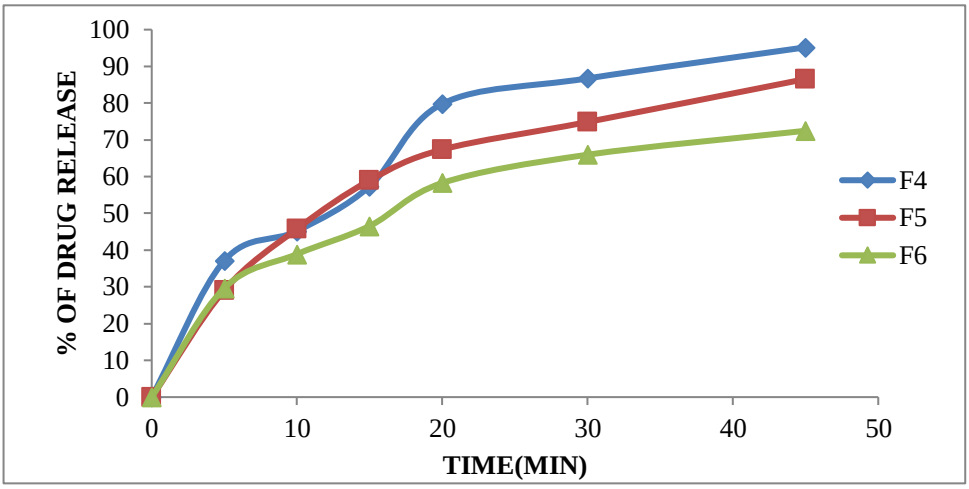


Fig 8.5: Dissolution profile of formulations F4, F5, F6

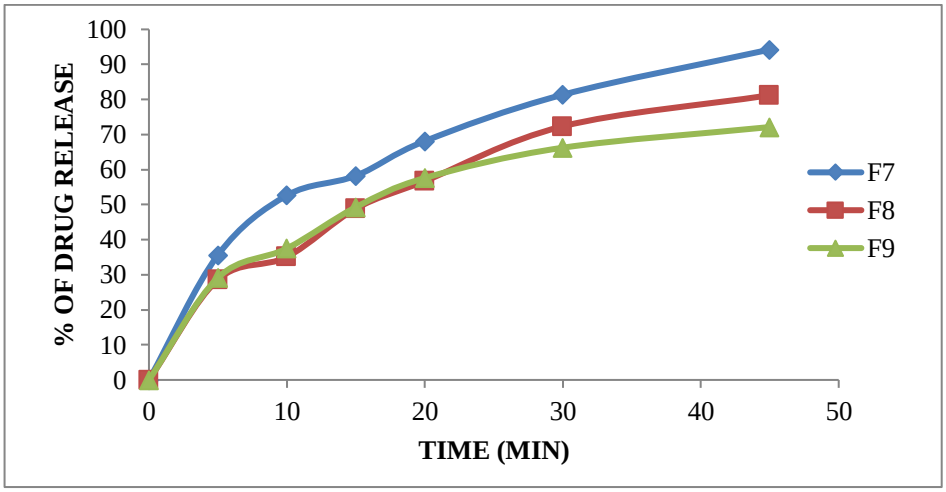


Fig 8.6: Dissolution profile of formulations F7, F8, F9

From the Table it was evident that the formulations prepared with Primojel were showed good drug release i.e., 98.12 % (F3 Formulation) in higher concentration of blend i.e. 150 mg. Formulations prepared with Ac-di-Sol showed good drug release i.e., 95.19% (F4 Formulation) in 50 mg concentration when increase in the concentration of Ac-di-Sol drug release unable to retarded. Formulations prepared with Cross povidone showed

maximum drug release i.e., 94.24 % (F7 Formulation) at 45 min in 50 mg of blend.
Among all formulations F3 formulation considered as optimized formulation which showed maximum drug release at 45 min. i.e. 98.12 %. Primojel were showed good release when compared to Ac-di-Sol. Finally concluded that F3 formulation (contains Primojel) was optimized better formulation.

FTIR RESULTS:

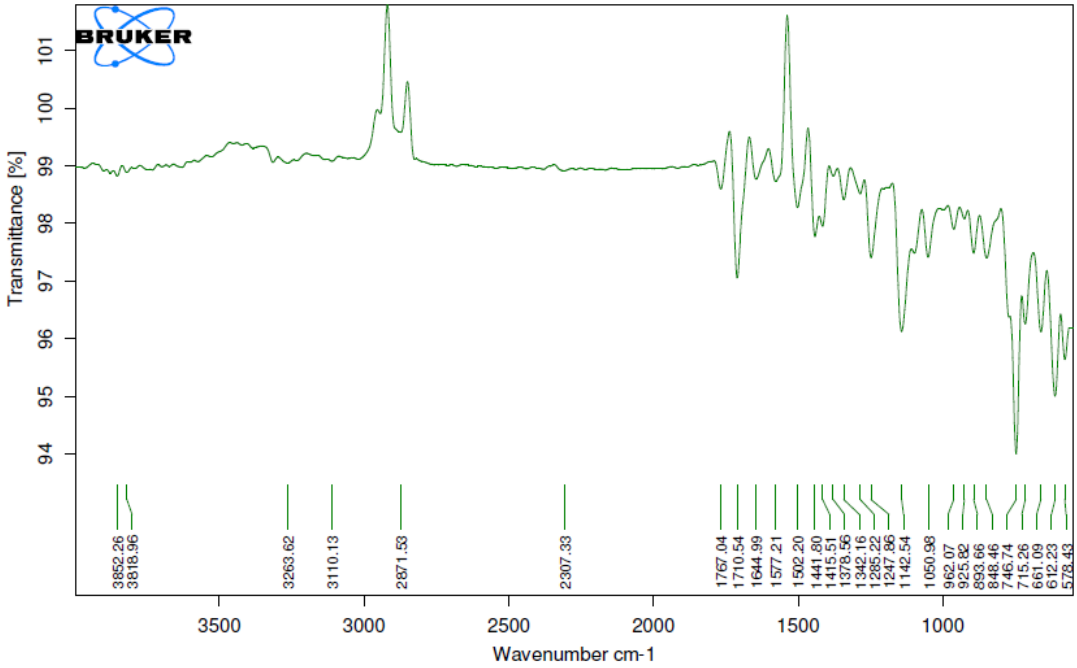


Fig 8.7: FTIR of Raltegravir potassium Pure Drug

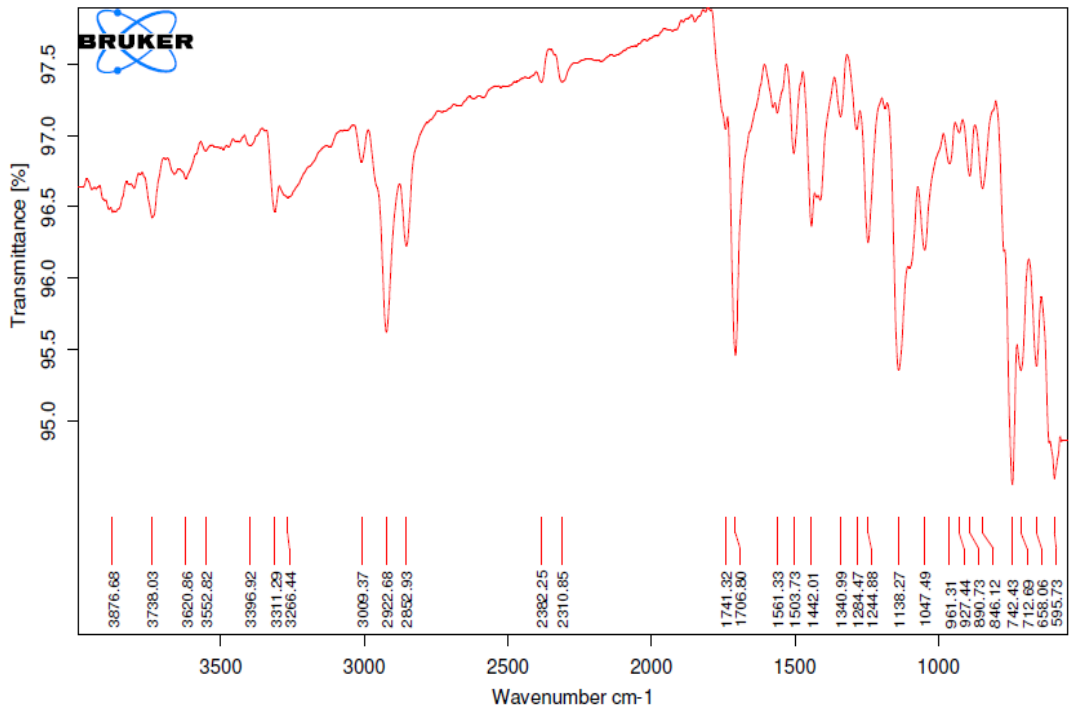


Fig 8.8: FTIR of Raltegravir potassium optimized formulation

Raltegravir potassium was mixed with proportions of excipients showed no colour change providing no drug-Excipient interactions.

CONCLUSIN:

The present study was carried out to formulate and evaluate Raltegravir potassium chewable tablets using different superdisintegrants, namely Primojel,

Ac-Di-Sol, and crospovidone, to identify an optimized formulation with satisfactory physicochemical properties and improved drug release.

The calibration curve of Raltegravir potassium in pH 6.8 phosphate buffer containing 0.25% SLS exhibited good linearity, with a reported regression coefficient ((R^2)) of approximately 0.998. The pre-compression evaluation demonstrated variations in bulk density, tapped density, Carr's index, Hausner's ratio, and angle of repose among the powder blends. The prepared chewable tablets were evaluated for physical appearance, average weight, hardness, friability, thickness, drug content, disintegration time, wetting time, and in vitro drug release. All formulations exhibited a white colour and drug content ranging from 96.25% to 99.36%. The measured hardness values ranged from 4.15 to 4.96 kg/cm², while friability values ranged from 0.22% to 0.86%. The disintegration time ranged from 21 to 52 seconds, and the wetting time ranged from 30 to 59 seconds, indicating differences in the performance of the formulations.

Among the nine formulations, **F3 was identified as the optimized formulation** based on its in vitro drug release and disintegration performance. It exhibited a disintegration time of 21 seconds, a wetting time of 30 seconds, and a maximum drug release of 98.12% at 45 minutes. The results indicated that the formulation containing Primojel provided better drug release than the formulations containing Ac-Di-Sol and crospovidone under the tested conditions.

The FTIR analysis of pure Raltegravir potassium and the optimized formulation did not indicate any apparent drug–excipient incompatibility based on the reported observations. However, further detailed spectral interpretation would be required to confirm compatibility conclusively.

In conclusion, the study identified F3 as the best-performing formulation among the nine prepared Raltegravir potassium chewable tablet formulations. The optimized formulation demonstrated satisfactory evaluated tablet properties, rapid disintegration, and promising in vitro drug release. Further stability studies and additional formulation evaluations may be required to establish its long-term stability and overall suitability for pharmaceutical development.

REFERANCES:

1. Dr. M. Sunitha Reddy, Annie Vijetha, Vaishnavi Bakka, "Chewable Tablets as a Patient-Friendly Drug Delivery System: A Comprehensive Review", International Journal of Pharmaceutical Sciences, 2025.
2. Mr.Agilan.V, Mrs.S.Kokila, "A Review on Chewable Tablet", Journal of Chemical Health Risks, 2024; 14(6): 2724-2733.
3. Rutuja Mundhe, Dr. Pavan Folane, Dr. K. R. Biyani, "Review on efficacy of Chewable Tablets in Improving Oral Drugs", International Journal of Pharmaceutical Sciences, 2025; 3(3): 696-710.
4. Asian Journal of Pharmaceutical Research and Development, "Chewable Tablets: A comprehensive review", Swapnil Sandip shingade, Trushali A. Mandho Pooja s. Kashid, kishor otari, 2024.
5. International Journal of Pharmaceutical Research & Applications, "A Review on Chewable Tablet" Abhishek Gaikwad, 2023.
6. Journal of Emerging technologies and Innovote Research. A review article on chewable Tablets Ekta Deshwal, Mrs. Archana Rautela, Ms. Reetu Papola, Mr. Praveen kumar.
7. Ajit Nichit, V. R. Bhor, "Development of Chewable Tablets for Paediatric Use."International Journal of Pharmaceutical Sciences, 2025.
8. Quality attribute consideration for chewable tablets, guidance for industry. Department of health and human services, Food and Drug Administration, Center for Drug Evaluation and Research (CDER). 1-13, August 2018. Available from: http://www.fda.gov/Drugs/GuidanceCompliancekegulatoryl nformation/Guidances/default.htm
9. Monika, Pragi, Varun Kumar, Amit Kumar, Deepak Garg, Preeti, Ashok Kumar, "A Narrative Review on Formulation and Quality Attribute Considerations for Chewable.
10. Dr. D.Rama Brahma Reddy, T. J. Mohan Reddy, P. Kavya, L. Keerthi, M. Reshma, M. Rikitha, M. Sruthi, "A Review on Chewable Tablets Tablets", International Journal of Current Pharmaceutical Review and Research, 2023; 15(9); 178-189.
11. Ashutosh Sengar, Hemant Vashisth, Vishwajeet Kishorilal Chatekar, Barkha Gupta, Alok Raju Thanges and Mani Sai Raja Sri Nitish Jillella, "From Concept to Consumption: A Comprehensive Review Of Chewable Tablets",World Journal of Pharmaceutical Research, 2024, 13(16): 176-189.
12. Nilesh Lahanu Gawade 2. Raosaheb Sopanrao Shendge (Correspondence Author), "A Review on Chewable Tablet"JETIR, 2020; 7(3) www.jetir.org (ISSN-2349-516