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CAPECITABINE RAPIDLY DISINTEGRATING TABLETS

Field of the Invention

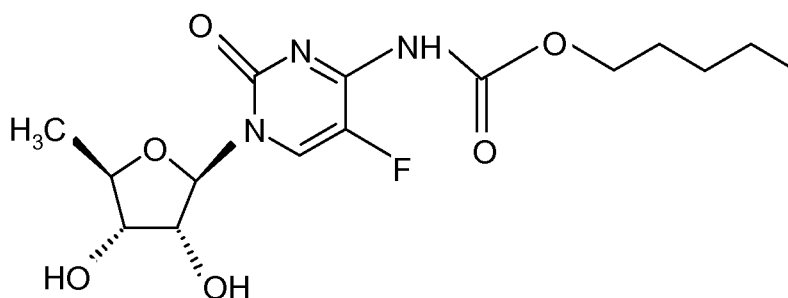
The present invention relates to a novel rapidly disintegrating pharmaceutical dosage form having as an active ingredient 5'-deoxy-5-fluoro-N-[(pentyloxy)-carbonyl]-cytidine

5 (capecitabine). The new dosage form is suitable for any patient and especially for patients who have difficulty swallowing solid oral dosage forms, including the pediatric and geriatric populations.

Background of the Invention

10 Capecitabine is a fluoropyrimidine carbamate with antineoplastic activity. It is an orally administered systemic prodrug of 5'-deoxy-5-fluorouridine (5'-DFUR), an antineoplastic agent. Capecitabine is marketed in the United States by Roche Laboratories under the brand name Xeloda®. The chemical name for capecitabine is 5'-deoxy-5-fluoro-N-[(pentyloxy)-carbonyl]-cytidine and has the following structural formula:

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Capecitabine is covered in US patents, including US Pat. No. 4,966,891 and 5,472,949 and USSN 60/667,509, filed April 1, 2005. Improved methods for the manufacture of capecitabine are taught in US Pat. No. 5,453,497 and 5,476,932, and application USSN 60/532,266, filed
20 December 22, 2003. To the extent necessary, any and all of the foregoing patents and applications are herein incorporated by reference.

In the United States, Capecitabine is currently approved for the treatment of colon and breast cancer. The currently approved/recommended dose of capecitabine in those indications is 1250
25 mg/m² administered orally twice daily (equivalent to 2500 mg/m² total daily dose) for 14 days

followed by a 7-day rest period given as 3-week cycles, for as long as needed. See approved package insert. Typically the mean duration of treatment is 3 to 6 three-week cycles. The currently approved unit dosage forms are a light peach-colored film coated tablet containing 150 mg of capecitabine and a peach-colored film coated tablet containing 500 mg of

5 capecitabine.

As with most solid oral dosage forms, the currently marketed capecitabine tablet may be difficult to swallow by the pediatric and geriatric populations, as well as by patients with swallowing impediments and blockages.

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The capecitabine tablet currently on the market (Xeloda® Roche) typically requires approximately 7-12 minutes to disintegrate in water (USP Disintegration Test), depending on the size of the tablet. Traditional excipients currently used in these tablets, such as lactose and croscarmellose sodium, by themselves do not overcome the cohesive property of capecitabine in the tablet. The end result is that the marketed tablet slowly disintegrates by surface erosion and is thus not very amenable to rapid dispersion or disintegration in water prior to oral administration to swallowing-compromised patients.

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A rapidly disintegrating tablet, such as one having a quickly dispersing matrix, and more preferably a rapidly disintegrating flavored tablet, is thus desirable to remedy the foregoing difficulty of slow tablet erosion in water prior to oral administration. Further it would be advantageous if the tablet would rapidly disintegrate with a traditional filler such as lactose or, in the case of lactose intolerant patients, with a replacement filler, such as, mannitol.

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Summary of the Invention

The present invention provides a rapidly disintegrating pharmaceutical dosage form for oral administration of 5'-deoxy-5-fluoro-N-[(pentyloxy)-carbonyl]-cytidine (capecitabine) that is suitable for administration to patients that have difficulty swallowing solid oral dosage forms. The formulation exhibits superior processing properties and end-product performance such as improved powder flow during compression, an excellent compressing/hardness profile, low friability and no sticking issues.

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Detailed Description of the Invention

The present invention provides a rapidly disintegrating film coated capecitabine pharmaceutical dosage form suitable for oral administration. Preferably, the tablet disintegrates in water at 37°C

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(USP Disintegration Test) in less than about 2.5 minutes, more preferably less than about 1.5 minutes, and have a hardness of about 8-23 SCU. By manually stirring in water at room temperature, the tablet disintegrates in less than or equal to about 3 minutes. In a preferred embodiment, the composition comprises, based upon the total weight of the final unit dosage form, from about 10% to about 50%, more preferably from about 25% to about 35%, and most preferably 30%, of capecitabine and from about 10% to about 50%, more preferably from about 20% to about 40%, and most preferably 30%, per unit dosage form of at least one disintegrant.

Yet another preferred embodiment of the present invention relates to a lactose free tablet composition for lactose intolerant individuals wherein the lactose is replaced by additional mannitol.

In addition, a directly compressible polyhydric alcohol, such as mannitol, and a microcrystalline cellulose are essential to maintain tablet strength without compromising the disintegration of the tablet. The composition of mannitol comprises from about 2% to about 25%, more preferably from about 4% to about 20% and most preferably 6% to about 16% and the microcrystalline cellulose comprises from about 4% to about 30%, more preferably from about 8% to about 25% and most preferably 12% to about 22% per unit dosage form.

Preferably, the composition comprises from about 50mg to about 1500mg, preferably 100 mg to about 750 mg, and more preferably from about 125 mg to about 500 mg, of capecitabine. Most preferably, the composition comprises, per unit dosage form, 125 mg, 150 mg, 175 mg, 250 mg, 350 mg or 500mg of capecitabine.

Useful disintegrants include, but are not limited to, crospovidone having a particle size in the range of 90% less than 15 microns to a particle size in the range of 90% less than 400 microns, croscarmellose sodium, sodium starch glycolate, low-substituted hydroxypropylcellulose, or any commercially available disintegrant, such as, Ludiflash ®(BASF Fine Chemicals)[which is a formulation of Mannitol (90%), Crospovidone (Kollidon® CL-SF) (5%) and Polyvinyl acetate (Kollicoat® SR 30D) (5%)] or any combination of the above disintegrants.

The pharmaceutical compositions of the invention may include additional therapeutically inert inorganic or organic carriers and excipients. For example, such compositions may include flavorants such as vanillin, bittermasking blend, strawberry flavor or any other flavorant or

flavorant combinations which are typically added to pharmaceutical preparations to render them palatable for oral administration.

5 The compositions may also include sweetening agents such as saccharin sodium, aspartame, sucralose, acesulfame-K, and sucrose.

The compositions may also include binders such as hydroxypropyl methylcellulose, hydroxypropylcellulose, povidone, pregelatinized starch or any other cold swelling corn starch.

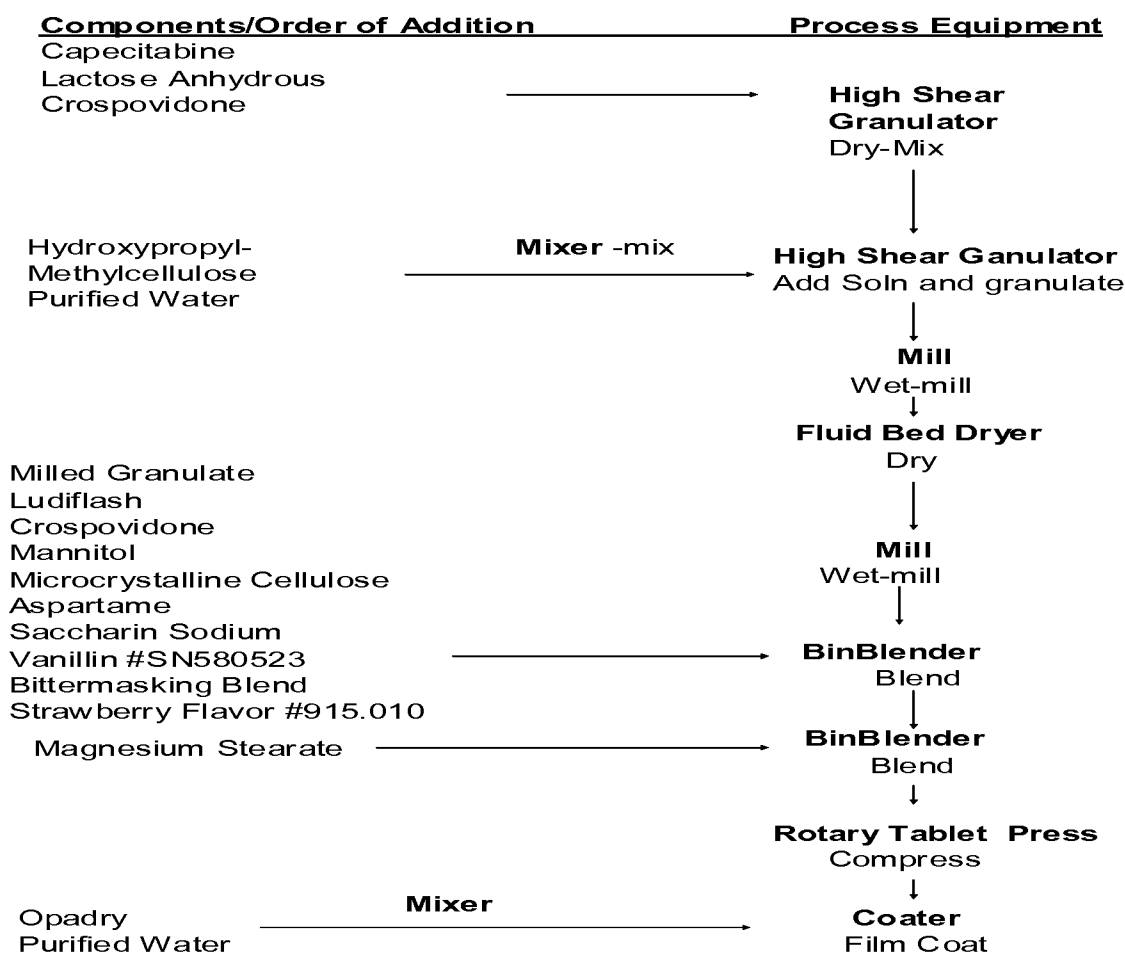
10 The compositions may also include fillers such as lactose anhydrous or microcrystalline cellulose.

The compositions may also include coloring agents, coating agents, antioxidants, stabilizers, lubricants (e.g., magnesium stearate), granulation aids, flow aids, and such other agents and
15 materials as are known to those skilled in the art of making pharmaceutical dosage forms for human oral consumption.

In an embodiment, the unit dosage form is a tablet, preferably a film coated tablet. The coating may contain excipients such as a film former (polymer), a plasticizer, an opacifier, pigments,
20 colorants and the like. The choice of such materials and the amounts to be utilized are considered to be within the art.

The film coat composition can be selected from, for example, Hypromellose, Polyvinyl Alcohol, Titanium Dioxide, Talc, Iron Oxide Color without or with plasticizer, such as Polyethylene
25 Glycol, Polysorbate 80, or Triacetin.

The rapidly disintegrating, preferably film coated dosage forms according to the present invention can be manufactured using the process as shown in the following flow chart:



- 5 The invention will now be illustrated by the following specific working examples which represent preferred embodiments according to the present invention. Those skilled in the art will understand that variations and modifications may be made through routine experimentation and practice of the invention. Therefore, the invention is intended not to be limited by the following examples, but to be defined by the appended claims and their equivalents.

ExamplesExamples 1 -65 *Formulation Composition:*

Examples	#1	#2	#3	#4	#5	#6
Ingredients	mg/tab	mg/tab	mg/tab	mg/tab	mg/tab	mg/tab
Capecitabine	125.00	150.00	175.00	250.00	350.00	500.00
Lactose Anhydrous	35.72	42.90	50.06	71.49	100.12	142.88
Hypromellose	3.57	4.28	5.00	7.14	10.00	14.28
Crospovidone	37.50	45.00	52.50	75.00	105.00	150.00
Ludiflash	89.30	107.16	125.00	178.60	250.00	357.20
Mannitol	23.21	27.85	32.50	46.43	65.00	92.84
Microcrystalline Cellulose	46.82	56.18	65.54	93.63	131.08	187.28
Magnesium Stearate	8.22	9.86	11.50	16.43	23.00	32.88
Aspartame	15.54	18.64	21.75	31.07	43.50	62.16
Saccharin Sodium	3.22	3.86	4.50	6.43	9.00	12.88
Vanillin	7.86	9.43	11.00	15.71	22.00	31.44
Bittermasking Blend	1.47	1.76	2.06	2.94	4.12	5.88
Strawberry Flavor #915.010	2.97	3.56	4.15	5.93	8.30	11.88
Purified Water ¹	q.s.	q.s.	q.s.	q.s.	q.s.	q.s.
Kernel Weight	400.40 mg	480.48 mg	560.56 mg	800.80 mg	1121.12 mg	1601.60 mg
Opadry pink film coat	8.00	9.61	11.00	16.00	22.00	32.03
Purified Water ¹	44.53	53.44	62.34	89.05	124.67	178.10
Total Tablet Weight	408.40 mg	490.09 mg	571.56 mg	816.80 mg	1143.12 mg	1633.63 mg

¹ removed during processing

Manufacturing Procedure:

1. Mix Capecitabine with Lactose Anhydrous and a portion of Crospovidone
2. Dissolve Hypromellose in the Purified Water
- 5 3. Granulate the blend from Step 1 with the granulating solution from Step 2
4. Wet mill the granulation from Step 3
5. Dry and mill the granules from Step 4
6. Blend the granules from Step 5 with Ludiflash®, remainder of Crospovidone, Mannitol, Microcrystalline Cellulose, Aspartame, Saccharin Sodium, Vanillin, Bittermasking Blend,
- 10 and Strawberry Flavor
7. Screen Magnesium Stearate, add it to the blend from Step 6 and mix
8. Compress the tableting mixture from Step 7 into kernels
9. Prepare the film-coating suspension by dispersing the film coating mixture in the Purified Water
- 15 10. Film-coat the kernels from Step 8 using the film-coating suspension from Step 9

Examples 7-12

The following compositions represent the preferred formulations based on a mg per tablet weight basis. Replacement of Lactose with Mannitol

Examples	#7	#8	#9	#10	#11	#12
Ingredients	mg/tab	mg/tab	mg/tab	mg/tab	mg/tab	mg/tab
Capecitabine	125.00	150.00	175.00	250.00	350.00	500.00
Mannitol	58.93	70.75	82.56	117.92	165.12	235.72
Hypromellose	3.57	4.28	5.00	7.14	10.00	14.28
Crospovidone	37.50	45.00	52.50	75.00	105.00	150.00
Ludiflash	89.30	107.16	125.00	178.60	250.00	357.20
Microcrystalline Cellulose	46.82	56.18	65.54	93.63	131.08	187.28
Magnesium Stearate	8.22	9.86	11.50	16.43	23.00	32.88
Aspartame	15.54	18.64	21.75	31.07	43.50	62.16
Saccharin Sodium	3.22	3.86	4.50	6.43	9.00	12.88
Vanillin	7.86	9.43	11.00	15.71	22.00	31.44

Bittermasking Blend	1.47	1.76	2.06	2.94	4.12	5.88
Strawberry Flavor #915.010	2.97	3.56	4.15	5.93	8.30	11.88
Purified Water ¹	q.s.	q.s.	q.s.	q.s.	q.s.	q.s.
Kernel Weight	400.40 mg	480.48 mg	560.56 mg	800.80 mg	1121.12 mg	1601.60 mg
Opadry pink film coat	8.00	9.61	11.00	16.00	22.00	32.03
Purified Water ¹	44.53	53.44	62.34	89.05	124.67	178.10
Total Tablet Weight	408.40 mg	490.09 mg	571.56 mg	816.80 mg	1143.12 mg	1633.63 mg

¹ removed during processing

Procedure: Similar to that for Examples 1-6, except replacing Lactose Anhydrous with Mannitol in Step 1.

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Example 13: Disintegration Aspects of the Dosage Form

The following is a comparison of the disintegration times for the rapidly disintegrating tablet of the present invention and the marketed tablet at low and high tablet strengths.

- 10 Disintegration times were obtained using the USP Disintegration Apparatus without discs and 37°C Water. The experimental test method and resultant disintegration times observed were performed in accordance with the USP Disintegration Test Method (USP 29, General Chapters, Physical Tests, <709> which is herein incorporated by reference.
- 15 For the purposes of this test, disintegration does not imply complete solution of the unit or even of its active constituent. Complete disintegration is defined as that state in which any residue of the unit, except fragments of insoluble coating or capsule shell, remaining on the screen of the test apparatus is a soft mass having no palpably firm core.
- 20 *USP Disintegration Apparatus*
- The apparatus consists of a basket-rack assembly, a 1000-mL, low-form beaker, 138 to 160 mm in height and having an inside diameter of 97 to 115 mm for the immersion fluid, a thermostatic arrangement for heating the fluid between 35 and 39 °C, and a device for raising and lowering the

basket in the immersion fluid at a constant frequency rate between 29 and 32 cycles per minute through a distance of not less than 53 mm and not more than 57 mm. The volume of the fluid in the vessel is such that at the highest point of the upward stroke the wire mesh remains at least 15 mm below the surface of the fluid and descends to not less than 25 mm from the bottom of the vessel on the downward stroke. At no time should the top of the basket-rack assembly become submerged. The time required for the upward stroke is equal to the time required for the downward stroke, and the change in stroke direction is a smooth transition, rather than an abrupt reversal of motion. The basket-rack assembly moves vertically along its axis. There is no appreciable horizontal motion or movement of the axis from the vertical.

Basket-Rack Assembly— The basket-rack assembly consists of six open-ended transparent tubes, each 77.5 ± 2.5 mm long and having an inside diameter of 20.7 to 23 mm and a wall 1.0 to 2.8 mm thick; the tubes are held in a vertical position by two plates, each 88 to 92 mm in diameter and 5 to 8.5 mm in thickness, with six holes, each 22 to 26 mm in diameter, equidistant from the center of the plate and equally spaced from one another. Attached to the under surface of the lower plate is a woven stainless steel wire cloth, which has a plain square weave with 1.8- to 2.2-mm apertures and with a wire diameter of 0.57 to 0.66 mm. The parts of the apparatus are assembled and rigidly held by means of three bolts passing through the two plates. A suitable means is provided to suspend the basket-rack assembly from the raising and lowering device using a point on its axis.

The design of the basket-rack assembly may be varied somewhat, provided the specifications for the glass tubes and the screen mesh size are maintained.

Disks— Disks were not used.

Procedure

Uncoated or Coated Tablets - Place 1 dosage unit in each of the six tubes of the basket. Operate the apparatus using water or the specified medium as the immersion fluid, maintained at 37 ± 2 . At the end of the time limit specified in the monograph, lift the basket from the fluid, and observe the tablets to see if all of the tablets have disintegrated completely. If 1 or 2 tablets fail to disintegrate completely, repeat the test on 12 additional tablets. The requirement is met if not fewer than 16 of the total of 18 tablets tested are disintegrated.

Results

Table 1: Disintegration Times in Water at 37°C (USP Disintegration Apparatus)

Capecitabine – Rapidly Disintegrating Tabletswith Ludiflash

125 mg- Example 1	69 seconds (1.15 minutes)
500 mg- Example 6	80 seconds (1.33 minutes)

125 mg - Example 7	70 seconds (1.2 minutes)
500 mg- Example 12	140 seconds (2.3 minutes)

Xeloda® Marketed Tablets (available fromRoche Laboratories)

150 mg	390 seconds (6.5 minutes)
500 mg	695 seconds (11.6 minutes)

As demonstrated in the above Table 1, the capecitabine rapidly disintegrating tablets of the invention have disintegration times in water that are approximately five- to nine-fold (in some cases even eight- to thirteen-fold) shorter than the current marketed tablets at their low and high dosage strengths, respectively.

10 Example 14: Hardness Test

Procedure: Place one tablet in the hardness tester and turn on the START button. Observe the tablet and record the reading Strong Cobb Units (SCU) at which the tablet breaks. Repeat the test on four additional tablets. Record the individual results, as well as the average of the five readings, in the laboratory record notebook.

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Calculation: Sum of the 5 readings (N)/ 5tablets = SCU/tablet

The tablets formed from the formulation of Example 1 gave an average of 8 SCU.

The tablets formed from the formulation of Example 6 gave an average of 23 SCU.

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Claims

1. A film coated pharmaceutical composition comprising capecitabine and at least one
5 disintegrant consisting of a formulation of Mannitol (90%), Crospovidone (5%) and
Polyvinyl acetate (5%), said composition being characterized by
disintegrating in water at 37°C in a USP Disintegration Apparatus in less than 2.5 minutes and
having a hardness of about 8 – 23 SCU.
- 10 2. The composition of claim 1 in which capecitabine, based upon the total weight of the
kernel composition, comprises from about 10% to about 50%.
3. The composition of claim 2 comprising from about 50 mg to about 1500 mg of
capecitabine.
- 15 4. The composition of claim 3 comprising from about 100 mg to about 750 mg of
capecitabine.
5. The composition of claim 3 comprising 125 mg, 175 mg, 250 mg, 350 mg or 500 mg of
20 capecitabine.
6. The pharmaceutical composition of claim 1, wherein in addition to a formulation of
Mannitol (90%), Crospovidone (5%) and Polyvinyl acetate (5%) a further disintegrant is
selected from the group consisting of crospovidone having a particle size in the range of 90%
25 less than 15 microns to a particle size in the range of 90% less than 400 microns, croscarmellose
sodium, sodium starch glycolate and low-substituted hydroxypropylcellulose
or any combination of said disintegrants.
7. The composition of claim 6 in which the disintegrant is from about 10% to about 50%
30 per unit dosage form.
8. The composition of claim 6 wherein the disintegrant is from about 20% to about 40% per
unit dosage form.
- 35 9. The composition of claim 6 wherein the disintegrant is about 30% per unit dosage form.

10. The pharmaceutical composition of claim 1 which contains in addition a directly compressible polyhydric alcohol.

5 11. The composition of claim 10 wherein the alcohol is mannitol and comprises from about 2% to about 25% per unit dosage form.

12. The composition of claim 11 wherein the mannitol comprises about 4% to about 20% per unit dosage form.

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13. The composition of claim 11 wherein the mannitol comprises about 6% to about 16% per unit dosage form.

14. The pharmaceutical composition of claim 1 which contains from about 4% to about 30%
15 microcrystalline cellulose per unit dosage form.

15. The composition of claim 14 which contains from about 8% to about 25% microcrystalline cellulose per unit dosage form.

20 16. The composition of claim 14 which contains about 12% to about 22% microcrystalline cellulose per unit dosage form.

17. The composition of claim 1 wherein the pharmaceutical composition disintegrates in less than 2.5 minutes.

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18. The composition of claim 1 which contains a binder selected from the group consisting of hydroxypropyl methylcellulose, hydroxypropylcellulose, povidone, pregelatinized starch and cold swelling corn starch.

30 19. The composition of claim 17 or 18 wherein capecitabine comprises from about 50 mg to about 1500 mg per unit dosage form.

20. The composition of claim 19 wherein capecitabine comprises from about 100 mg to about 750 mg per unit dosage form.

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21. The composition of claim 19 wherein capecitabine comprises 125 mg, 150 mg, 175 mg, 250 mg, 350mg or 500 mg per unit dosage form.

22. A pharmaceutical composition which disintegrates in water at 37°C in a USP

5 Disintegration Apparatus in less than 2.5 minutes comprising capecitabine, at least one disintegrant consisting of a formulation of Mannitol (90%), Crospovidone (5%) and Polyvinyl acetate (5%), a binder, at least one filler, a lubricant, at least one sweetening agent and at least one flavorant.

10 23. A film coated pharmaceutical composition according to claim 1, which disintegrates in water at 37°C in a USP Disintegration Apparatus in less than 1.5 minutes comprising 125 mg of Capecitabine, 35.72 mg of Lactose Anhydrous, 3.57 mg of Hypromellose, 37.50 mg of Crospovidone, 89.30 mg of a formulation of Mannitol (90%), Crospovidone (5%) and Polyvinyl acetate (5%), 23.21 mg of Mannitol, 46.82 mg of Microcrystalline Cellulose, 8.22 mg
15 of Magnesium Stearate, 15.54 mg of Aspartame, 3.22 mg of Saccharin Sodium, 7.86 mg of Vanillin, 1.47 mg of Bittermasking Blend and 2.97 mg of Strawberry Flavor.

24. A film coated pharmaceutical composition according to claim 1, which disintegrates in water at 37°C in a USP Disintegration Apparatus in less than 1.5 minutes comprising 150 mg of
20 Capecitabine, 42.90 mg of Lactose Anhydrous, 4.28 mg of Hypromellose, 45.00 mg of Crospovidone, 107.16 mg of a formulation of Mannitol (90%), Crospovidone (5%) and Polyvinyl acetate (5%), 27.85 mg of Mannitol, 56.18 mg of Microcrystalline Cellulose, 9.86 mg of Magnesium Stearate, 18.64 mg of Aspartame, 3.86 mg of Saccharin Sodium, 9.43 mg of Vanillin, 1.76 mg of Bittermasking Blend and 3.56 mg of Strawberry Flavor.

25 25. A film coated pharmaceutical composition according to claim 1, which disintegrates in water at 37°C in a USP Disintegration Apparatus in less than 1.5 minutes comprising 175 mg of Capecitabine, 50.06 mg of Lactose Anhydrous, 5.00 mg of Hypromellose, 52.50 mg of Crospovidone, 125.00 mg of a formulation of Mannitol (90%), Crospovidone (5%) and
30 Polyvinyl acetate (5%), 32.50 mg of Mannitol, 65.54 mg of Microcrystalline Cellulose, 11.50 mg of Magnesium Stearate, 21.75 mg of Aspartame, 4.50 mg of Saccharin Sodium, 11.00 mg of Vanillin, 2.06 mg of Bittermasking Blend and 4.15 mg of Strawberry Flavor.

26. A film coated pharmaceutical composition according to claim 1, which disintegrates in
35 water at 37°C in a USP Disintegration Apparatus in less than 1.5 minutes comprising 250 mg of

Capecitabine, 71.49 mg of Lactose Anhydrous, 7.14 mg of Hypromellose, 75.00 mg of Crospovidone, 178.60 mg of a formulation of Mannitol (90%), Crospovidone (5%) and Polyvinyl acetate (5%), 46.43 mg of Mannitol, 93.63 mg of Microcrystalline Cellulose, 16.43 mg of Magnesium Stearate, 31.07 mg of Aspartame, 6.43 mg of Saccharin Sodium, 15.71 mg of Vanillin, 2.94 mg of Bittermasking Blend and 5.93 mg of Strawberry Flavor.

27. A film coated pharmaceutical composition according to claim 1, which disintegrates in water at 37°C in a USP Disintegration Apparatus in less than 1.5 minutes comprising 350 mg of Capecitabine, 100.12 mg of Lactose Anhydrous, 10.00 mg of Hypromellose, 105.00 mg of Crospovidone, 250.00 mg of a formulation of Mannitol (90%), Crospovidone (5%) and Polyvinyl acetate (5%), 65.00 mg of Mannitol, 131.08 mg of Microcrystalline Cellulose, 23.00 mg of Magnesium Stearate, 43.50 mg of Aspartame, 9.00 mg of Saccharin Sodium, 22.00 mg of Vanillin, 4.12 mg of Bittermasking Blend and 8.30 mg of Strawberry Flavor.

28. A film coated pharmaceutical composition according to claim 1, which disintegrates in water at 37°C in a USP Disintegration Apparatus in less than 1.5 minutes comprising 500 mg of Capecitabine, 142.88 mg of Lactose Anhydrous, 14.28 mg of Hypromellose, 150.00 mg of Crospovidone, 357.20 mg of a formulation of Mannitol (90%), Crospovidone (5%) and Polyvinyl acetate (5%), 92.84 mg of Mannitol, 187.28 mg of Microcrystalline Cellulose, 32.88 mg of Magnesium Stearate, 62.16 mg of Aspartame, 12.88 mg of Saccharin Sodium, 31.44 mg of Vanillin, 5.88 mg of Bittermasking Blend and 11.88 mg of Strawberry Flavor.

29. A film coated pharmaceutical composition according to claim 1, which disintegrates in water at 37°C in a USP Disintegration Apparatus in less than 1.5 minutes comprising 125.00 mg of Capecitabine, 3.57 mg of Hypromellose, 37.50 mg of Crospovidone, 89.30 mg of a formulation of Mannitol (90%), Crospovidone (5%) and Polyvinyl acetate (5%), 58.93 mg of Mannitol, 46.82 mg of Microcrystalline Cellulose, 8.22 mg of Magnesium Stearate, 15.54 mg of Aspartame, 3.22 mg of Saccharin Sodium, 7.86 mg of Vanillin, 1.47 mg of Bittermasking Blend and 2.97 mg of Strawberry Flavor.

30. A film coated pharmaceutical composition according to claim 1, which disintegrates in water at 37°C in a USP Disintegration Apparatus in less than 2.5 minutes comprising 150.00 mg of Capecitabine, 4.28 mg of Hypromellose, 45.00 mg of Crospovidone, 107.16 mg of a formulation of Mannitol (90%), Crospovidone (5%) and Polyvinyl acetate (5%), 70.75 mg of Mannitol, 56.18 mg of Microcrystalline Cellulose, 9.86 mg of Magnesium Stearate, 18.64 mg of

Aspartame, 3.86 mg of Saccharin Sodium, 9.43 mg of Vanillin, 1.76 mg of Bittermasking Blend and 3.56 mg of Strawberry Flavor.

31. A film coated pharmaceutical composition according to claim 1, which disintegrates in
5 water at 37°C in a USP Disintegration Apparatus in less than 2.5 minutes comprising 175.00 mg
of Capecitabine, 5.00 mg of Hypromellose, 52.50 mg of Crospovidone, 125.00 mg of a
formulation of Mannitol (90%), Crospovidone (5%) and Polyvinyl acetate (5%), 82.56 mg of
Mannitol, 65.54 mg of Microcrystalline Cellulose, 11.50 mg of Magnesium Stearate, 21.75 mg
of Aspartame, 4.50 mg of Saccharin Sodium, 11.00 mg of Vanillin, 2.06 mg of Bittermasking
10 Blend and 4.15 mg of Strawberry Flavor.

32. A film coated pharmaceutical composition according to claim 1, which disintegrates in
water at 37°C in a USP Disintegration Apparatus in less than 2.5 minutes comprising 250.00 mg
of Capecitabine, 7.14 mg of Hypromellose, 75.00 mg of Crospovidone, 178.60 mg of a
15 formulation of Mannitol (90%), Crospovidone (5%) and Polyvinyl acetate (5%), 117.92 mg of
Mannitol, 93.63 mg of Microcrystalline Cellulose, 16.43 mg of Magnesium Stearate, 31.07 mg
of Aspartame, 6.43 mg of Saccharin Sodium, 15.71 mg of Vanillin, 2.94 mg of Bittermasking
Blend and 5.93 mg of Strawberry Flavor.

20 33. A film coated pharmaceutical composition according to claim 1, which disintegrates in
water at 37°C in a USP Disintegration Apparatus in less than 2.5 minutes comprising 350.00 mg
of Capecitabine, 10.00 mg of Hypromellose, 105.00 mg of Crospovidone, 250.00 mg of a
formulation of Mannitol (90%), Crospovidone (5%) and Polyvinyl acetate (5%), 165.12 mg of
Mannitol, 131.08 mg of Microcrystalline Cellulose, 23.00 mg of Magnesium Stearate, 43.50 mg
25 of Aspartame, 9.00 mg of Saccharin Sodium, 22.00 mg of Vanillin, 4.12 mg of Bittermasking
Blend and 8.30 mg of Strawberry Flavor.

34. A film coated pharmaceutical composition according to claim 1, which disintegrates in
water at 37°C in a USP Disintegration Apparatus in less than 2.5 minutes comprising 500.00 mg
30 of Capecitabine, 14.28 mg of Hypromellose, 150.00 mg of Crospovidone, 357.20 mg of a
formulation of Mannitol (90%), Crospovidone (5%) and Polyvinyl acetate (5%), 235.72 mg of
Mannitol, 187.28 mg of Microcrystalline Cellulose, 32.88 mg of Magnesium Stearate, 62.16 mg
of Aspartame, 12.88 mg of Saccharin Sodium, 31.44 mg of Vanillin, 5.88 mg of Bittermasking
Blend and 11.88 mg of Strawberry Flavor.

35. The novel compositions, methods, processes and uses substantially as described herein before.
