[0009] In another aspect, a composition for increasing lactose tolerance in a subject comprising about 0.1 to 2 grams of a GOS composition is provided, wherein said GOS composition comprises about 96% GOS by weight. In another embodiment, the composition further comprises a pharmaceutically acceptable excipient. In another embodiment, said composition is contained within a capsule. In another embodiment, said capsule is a gelatin capsule. In another embodiment, said gelatin capsule comprises a viscous syrup or liquid comprising GOS. In another embodiment, said syrup does not contain an anti-oxidant or preservative. In another embodiment, said composition is contained in a tablet. In another embodiment, the composition further comprises a probiotic. In another embodiment, said GOS composition comprises an enteric coating.

[0010] In another aspect, an oral dosage form of GOS comprising about 0.1 to 2 grams of a GOS composition is provided wherein said GOS composition is a viscous syrup or liquid encapsulated in a gelatin capsule. In one embodiment, said GOS composition comprises about 80% GOS by weight. In another embodiment, said GOS composition comprises about 96% GOS by weight. In another embodiment, the GOS composition further comprises a probiotic. In another embodiment, the GOS composition comprises an enteric coating.

[0011] In another aspect, an oral dosage form of GOS comprising a GOS composition in a tablet or capsule formulated for controlled release is provided. In one embodiment, said controlled release occurs in the intestines. In another embodiment, said GOS composition comprises an enteric coating. In another embodiment, said controlled release occurs in the lower intestine. In another embodiment, the composition further comprises a probiotic. In one embodiment, said GOS composition comprises an enteric coating.

[0011a] In another aspect, a solid oral unit-dosage form comprising: a prebiotic composition comprising at least 95% by weight galactooligosaccharides (GOS) and 5% or less by weight digestible saccharides is provided.

[0011b] In another aspect, there is provided a use of a galactooligosaccharide (GOS) in the preparation of a composition for increasing lactose tolerance in a subject experiencing one or more symptoms of lactose intolerance wherein the composition is adapted for administration to the subject each day for a predetermined number of days, and wherein the composition comprises at least 95% by weight galactooligosaccharides (GOS) purified using a purification procedure.

INCORPORATION BY REFERENCE

[0012] All publications, patents, and patent applications mentioned in this specification are herein incorporated by reference in their entirety to the same extent as if each individual publication, patent, or patent application was specifically and individually indicated to be incorporated by reference.

BRIEF DESCRIPTION OF THE DRAWINGS

[0013] The novel features of the invention are set forth with particularity in the appended claims. A better understanding of the features and advantages of the present invention will be obtained by reference to the following detailed description that sets forth illustrative embodiments, in which the principles of the invention are utilized, and the accompanying drawings of which:

[0014] **Figure 1** illustrates the chemical structure of lactulose.

[0015] **Figure 2** illustrates the chemical structure of raffinose.

[0016] **Figure 3** illustrates the chemical structure of stachyose.

[0017] **Figure 4** illustrates the chemical structure of inulin.

CLAIMS

WHAT IS CLAIMED IS:

1. A solid oral unit-dosage form comprising: a prebiotic composition comprising at least 95% by weight galactooligosaccharides (GOS) and 5% or less by weight digestible saccharides.

2. The solid oral unit-dosage form of claim 1, wherein at least 96% by weight of the prebiotic composition is GOS.

3. The solid oral unit-dosage form of any one of claims 1-2, wherein 100% by weight of the prebiotic composition is GOS.

4. The solid oral unit-dosage form of any one of claims 1-3, wherein the GOS comprises disaccharides, trisaccharides, tetrasaccharides, and pentasaccharides.

5. The solid oral unit-dosage form of any one of claims 1-4, wherein the pre biotic composition comprises about 4%, about 3%, about 2%, about 1 % by weight digestible saccharides.

6. The solid oral unit-dosage form of any one of claims 1-5, wherein the digestible saccharides comprise lactose, galactose, or glucose.

7. The solid oral unit-dosage form of any one of claims 1-6, wherein the prebiotic composition comprises about 0.001 % to about 1 % glucose or about 0.01 % to about 0.1 % glucose by weight.

8. The solid oral unit-dosage form of any one of claims 1-7, wherein the prebiotic composition comprises about 0.1 % to about 2% galactose by weight.

9. The solid oral unit-dosage form of any one of claims 1-8, wherein the prebiotic composition comprises less than 5%, 4%, 3%, 2%, or 1 % lactose by weight.

10. The solid oral unit-dosage form of any one of claims 1-9, wherein the GOS comprises about 45-55% trisaccharide by weight, about 15-25% tetrasaccharide by weight, about 1-10% pentasaccharide by weight.

11. The solid oral unit-dosage form of any one of claims 1-9, wherein the GOS comprises about 10% to about 45% disaccharide by weight, about 10% to about 45% trisaccharide by

weight, about 10% to about 45% tetrasaccharide by weight, and about 10% to about 45% pentasaccharide by weight.

12. The solid oral unit-dosage form of any one of claims 1-9, wherein the GOS comprises about 50-55% disaccharide by weight, about 20-30% trisaccharide by weight, about 10-20% tetrasaccharide by weight, and about 1-10% pentasaccharide by weight.

13. The solid oral unit-dosage form of any one of claims 1-9, wherein the GOS comprises about 2-5 % by weight of a mixture of tri- to hexa-saccharides, 25-35 % by weight Gal~ (1-6) Glc, 5-15 % by weight Gal~ (1-3) Glc, 5-15 % by weight Gal~ (1-2) Glc, 25-30 % by weight Gal~ (1-6) Gal, and 1-5% by weight Gal~ (1-3) Gal.

14. The solid oral unit-dosage form of any one of claims 1-13, wherein the GOS is characterized by having a saccharometric measurement of about 50 to 100 degrees Brix.

15. The solid oral unit-dosage form of any one of claims 1-14, wherein the prebiotic composition comprises less than about 10 ppm heavy metals.

16. The solid oral unit-dosage form of any one of claims 1-15, wherein the prebiotic composition comprises less than about 0.10% sulphated ash.

17. The solid oral unit-dosage form of any one of claims 1-16, wherein the solid oral unit-dosage form does not contain a probiotic.

18. The solid oral unit-dosage form of any one of claims 1-16, further comprising a probiotic.

19. The solid oral unit-dosage form of any one of claims 1-18, further comprising a pharmaceutically acceptable excipient.

20. The solid oral unit-dosage form of any one of claims 1-19, wherein the solid oral unit-dosage form does not contain an anti-oxidant or preservative.

21. The solid oral unit-dosage form of any one of claims 1-20, provided as a powder, tablet, effervescent unit-dosage form, chewable unit-dosage form, or lozenge.

22. The solid oral unit-dosage form of claim 21, provided as the powder in a sachet or capsule.

23. The solid oral unit-dosage form of any one of claims 1-22, wherein the oral unit-dosage form is formulated for controlled release.

24. The solid oral unit-dosage form of claim 23, wherein the controlled release occurs in the lower intestine.

25. The solid oral unit-dosage form of any one of claims 1-24, wherein the oral unit-dosage form comprises an enteric coating.

26. Use of a galactooligosaccharide (GOS) in the preparation of a composition for increasing lactose tolerance in a subject experiencing one or more symptoms of lactose intolerance wherein the composition is adapted for administration to the subject each day for a predetermined number of days, and wherein the composition comprises at least 95% by weight galactooligosaccharides (GOS) purified using a purification procedure.

27. The use of claim 26, wherein said composition is for administration of from about 1 mg to about 20 g of the GOS per serving.

28. The use of claim 26, wherein said composition is for administration each day for a predetermined number of days.

29. The use of claim 28, wherein the predetermined number of days is from about 7 days and about 60 days.

30. The use of claim 27, wherein said composition is for administration of a lower amount of the GOS on the first day of administration than the last day of administration.

31. The use of claim 27, wherein said composition is for administration of the same amount of the GOS on the first day of administration as the last day of administration.

32. The use of claim 27, wherein said composition is for administration one, two, or three times per day.

33. The use of claim 27, wherein said composition is for administration in conjunction with a meal.

34. The use of claim 27, wherein said composition is for administration without a meal.

35. The use of claim 27 wherein said subject has experienced one or more symptoms of lactose intolerance.

36. The use of claim 27, wherein the one or more symptoms of lactose intolerance comprise flatulence, heartburn, stomach upset, nausea, bloating, diarrhea, abdominal pain, cramping, or vomiting.

37. The use of claim 27, wherein said composition is used to produce a reduction in at least one of the one or more symptoms of lactose intolerance.

38. The use of claim 37, wherein said composition is used to produce a reduction in at least one of the one or more symptoms of lactose intolerance upon consumption of an amount of lactose that previously caused the one or more symptoms of lactose intolerance.

39. The use of claim 37, wherein the reduction in at least one of the one or more symptoms of lactose intolerance persists for at least about a week.

40. The use of claim 27, wherein the amount of the prebiotic composition to be administered to the subject is adjusted based on the subject's weight.