What is claimed is:

1. A composition, comprising:

at least one medium chain fatty acid or ester thereof included in an amount between 5 grams and 50 grams total of the at least one medium chain fatty acid or ester thereof; and

at least one beta-hydroxybutyrate compound included in an amount between 2 grams and 50 grams total of the at least one beta-hydroxybutyrate compound, wherein the at least one beta-hydroxybutyrate compound is comprised of a beta-hydroxybutyrate monomer salt.

2. A composition, comprising:

at least one medium chain fatty acid or ester thereof; and

a beta-hydroxybutyrate compound mixture comprising sodium beta-hydroxybutyrate, potassium beta-hydroxybutyrate, calcium beta-hydroxybutyrate, and magnesium beta-hydroxybutyrate.

3. The composition of claim 1, wherein the at least one beta-hydroxybutyrate compound comprises one or more of a beta-hydroxybutyrate monomer salt comprising sodium beta-hydroxybutyrate, arginine beta-hydroxybutyrate, potassium beta-hydroxybutyrate, calcium beta-hydroxybutyrate, magnesium beta-hydroxybutyrate, lithium beta-hydroxybutyrate, lysine beta-hydroxybutyrate, histidine beta-hydroxybutyrate, omithine beta-hydroxybutyrate, creatine beta-hydroxybutyrate, agmatine beta-hydroxybutyrate, or citrulline beta-hydroxybutyrate.

4. The composition of claim 1, wherein the at least one beta-hydroxybutyrate compound comprises a salt mixture comprising a plurality of sodium beta-hydroxybutyrate, potassium beta-hydroxybutyrate, calcium beta-hydroxybutyrate, or magnesium beta-hydroxybutyrate.

5. The composition of claim 1 or 2, wherein the at least one beta-hydroxybutyrate compound is comprised of (i) a beta-hydroxybutyrate monomer salt and 1,3-butanediol, (ii) a beta-hydroxybutyrate monomer salt and ethyl acetoacetate, (iii) a beta-hydroxybutyrate monomer salt and ethyl beta-hydroxybutyrate, (iv) a salt mixture of beta-hydroxybutyrate monomer salts and 1,3-butanediol, (v) a salt mixture of beta-hydroxybutyrate monomer salts and ethyl acetoacetate, or (vi) a salt mixture of beta-hydroxybutyrate monomer salts and ethyl beta-hydroxybutyrate.

6. The composition of claim 1 or 2, wherein the at least one beta-hydroxybutyrate compound is racemic DL-beta-hydroxybutyrate or the single isomer R-beta-hydroxybutyrate.

7. The composition of claim 1 or 2, wherein the at least one beta-hydroxybutyrate compound is included in an amount between 5 grams and 30 grams.

8. The composition of claim 1 or 2, wherein the at least one beta-hydroxybutyrate compound is included in an amount between 10 grams and 20 grams.

9. The composition of claim 1 or 2, wherein the at least one medium chain fatty acid or ester thereof is included in an amount between 10 grams and 40 grams.

10. The composition of claim 1 or 2, wherein the at least one medium chain fatty acid or ester thereof is included in an amount between 15 grams and 30 grams.

11. The composition of claim 1 or 2, wherein the at least one beta-hydroxybutyrate compound is included in an amount between 5 grams and 30 grams and the at least one medium chain fatty acid or ester thereof is included in an amount between 10 grams and 40 grams.

12. The composition of claim 1 or 2, wherein the at least one beta-hydroxybutyrate compound is included in an amount between 10 grams and 20 grams and the at least one medium chain fatty acid or ester thereof is included in an amount between 15 grams and 30 grams.

13. The composition of claim 1 or 2, wherein the at least one medium chain fatty acid or ester thereof is selected from the group consisting of medium chain triglycerides, coconut oil, coconut milk powder, fractionated coconut oil, palm kernel oil, isolated hexanoic acid, isolated octanoic acid, isolated decanoic acid, ethoxylated triglyceride, enone triglyceride derivatives thereof, aldehyde triglyceride derivatives thereof, monoglyceride derivatives thereof, diglyceride derivatives thereof, triglyceride derivatives thereof, and an alkyl ester thereof.

14. The composition of claim 1 or 2, further comprising at least one additional component selected from the group consisting of amino acids, amino acid metabolites, vitamins, minerals, coconut milk powder, electrolytes, NADH, tetrahydrobiopeterin, alpha-ketoglutaric acid, alpha lipoic acid, nutritional co-factors, calcium beta-methyl-beta-hydroxybutyrate, arginine alpha-ketoglutarate, sodium R-alpha lipoic acid, thiamine, riboflavin, niacin, pyridoxine, ascorbic acid, citric acid, malic acid, sodium benzoate, potassium sorbate, acesulfame K, aspartame, xanthan gum, and combinations thereof.

15. The composition of claim 1 or 2, further comprising at least one additional component selected from the group consisting of amino acids, amino acid metabolites, vitamins, minerals, coconut milk powder, electrolytes, NADH, tetrahydrobiopeterin, alpha-ketoglutaric acid, alpha lipoic acid, nutritional co-factors, calcium beta-methyl-beta-hydroxybutyrate, arginine alpha-ketoglutarate, sodium R-alpha lipoic acid, thiamine, riboflavin, niacin, pyridoxine, ascorbic acid, citric acid, malic acid, sodium benzoate, potassium sorbate, acesulfame K, aspartame, xanthan gum, and combinations thereof.

16. The composition of claim 1, wherein the at least one beta-hydroxybutyrate compound comprises a salt mixture comprising a plurality of sodium beta-hydroxybutyrate, potassium beta-hydroxybutyrate, calcium beta-hydroxybutyrate, and magnesium beta-hydroxybutyrate.

17. The composition of claim 1 or 2, wherein the at least one medium chain fatty acid or ester thereof and the at least one beta-hydroxybutyrate compound are each included in an effective amount so as to induce ketosis in a mammal for at least 240 minutes.

18. Use of a composition in the manufacture of a medicament for the inducement of sustained ketosis in a mammal to therapeutically treat obesity, the medicament comprising:

at least one medium chain fatty acid or ester thereof; and

at least one beta-hydroxybutyrate compound, wherein the at least one beta-hydroxybutyrate compound is comprised of a beta-hydroxybutyrate monomer salt,

wherein the at least one medium chain fatty acid or ester thereof and the at least one beta-hydroxybutyrate compound are included in the medicament in an effective amount so as to induce sustained ketosis in a mammal for at least 240 minutes.

19. The use of claim 18, wherein the at least one beta-hydroxybutyrate compound is included in the medicament in an amount between 5 grams and 30 grams.

20. The use of claim 18, wherein the at least one beta-hydroxybutyrate compound is included in the medicament in an amount between 10 grams and 20 grams.

21. The use of claim 18, wherein the at least one medium chain fatty acid or ester thereof is included in the medicament in an amount between 10 grams and 40 grams.

22. The use of claim 18, wherein the at least one medium chain fatty acid or ester thereof is included in the medicament in an amount between 15 grams and 30 grams.

23. The use of claim 18, wherein the at least one beta-hydroxybutyrate compound is included in the medicament in an amount between 2 grams and 50 grams and the at least one medium chain fatty acid or ester thereof is included in the medicament in an amount between 5 grams and 50 grams.

24. The use of claim 18, wherein the at least one beta-hydroxybutyrate compound is included in the medicament in an amount between 5 grams and 30 grams and the at least one medium chain fatty acid or ester thereof is included in the medicament in an amount between 10 grams and 40 grams.

25. The use of claim 18, wherein the at least one beta-hydroxybutyrate compound is included in the medicament in an amount between 10 grams and 20 grams and the at least one medium chain fatty acid or ester thereof is included in the medicament in an amount between 15 grams and 30 grams.

26. The use of claim 18, wherein the at least one beta-hydroxybutyrate compound comprises one or more of a beta-hydroxybutyrate monomer salt comprising sodium beta-hydroxybutyrate, arginine beta-hydroxybutyrate, potassium beta-hydroxybutyrate, calcium beta-hydroxybutyrate, magnesium beta-hydroxybutyrate, lithium beta-hydroxybutyrate, lysine beta-hydroxybutyrate, histidine beta-hydroxybutyrate, omithine beta-hydroxybutyrate, creatine beta-hydroxybutyrate, agmatine beta-hydroxybutyrate, and citrulline beta-hydroxybutyrate.

27. The use of claim 18, wherein the at least one beta-hydroxybutyrate compound comprises a salt mixture comprising a plurality of sodium beta-hydroxybutyrate,

potassium beta-hydroxybutyrate, calcium beta-hydroxybutyrate, and magnesium beta-hydroxybutyrate.

28. The use of claim 18, wherein the at least one beta-hydroxybutyrate compound is comprised of (i) a beta-hydroxybutyrate monomer salt and 1,3-butanediol, (ii) a beta-hydroxybutyrate monomer salt and ethyl acetoacetate, (iii) a beta-hydroxybutyrate monomer salt and ethyl beta-hydroxybutyrate, (iv) a salt mixture of beta-hydroxybutyrate monomer salts and 1,3-butanediol, (v) a salt mixture of beta-hydroxybutyrate monomer salts and ethyl acetoacetate, and (vi) a salt mixture of beta-hydroxybutyrate monomer salts and ethyl beta-hydroxybutyrate.

29. The use of claim 18, wherein the at least one medium chain fatty acid or ester thereof is selected from the group consisting of medium chain triglycerides, coconut oil, coconut milk powder, fractionated coconut oil, palm kernel oil, isolated hexanoic acid, isolated octanoic acid, isolated decanoic acid, ethoxylated triglyceride, enone triglyceride derivatives thereof, aldehyde triglyceride derivatives thereof, monoglyceride derivatives thereof, diglyceride derivatives thereof, triglyceride derivatives thereof, and an alkyl ester thereof.

30. The use of claim 18, the medicament further comprising at least one additional component selected from the group consisting of amino acids, amino acid metabolites, vitamins, minerals, coconut milk powder, electrolytes, NADH, tetrahydrobiopeterin, alpha-ketoglutaric acid, alpha lipoic acid, nutritional co-factors, calcium beta-methyl-beta-hydroxybutyrate, arginine alpha-ketoglutarate, sodium R-alpha lipoic acid, thiamine, riboflavin, niacin, pyridoxine, ascorbic acid, citric acid, malic acid, sodium benzoate, potassium sorbate, acesulfame K, aspartame, xanthan gum, and combinations thereof.

31. Use of a composition for the manufacture of a medicament for promoting or sustaining ketosis in a mammal to therapeutically treat obesity, the medicament comprising: at least one medium chain fatty acid or ester thereof; and at least one

beta-hydroxybutyrate compound, wherein the at least one beta-hydroxybutyrate compound is comprised of a beta-hydroxybutyrate monomer salt,

wherein one or more doses of the medicament provide between 2 grams and 50 grams of the at least one beta-hydroxybutyrate compound and between 5 grams and 50 grams of the at least one medium chain fatty acid or ester.

32. Use of a composition for the manufacture of a medicament for promoting or sustaining ketosis in a mammal to therapeutically treat obesity, the medicament comprising:

at least one medium chain fatty acid or ester thereof; and

a beta-hydroxybutyrate compound mixture comprising sodium beta-hydroxybutyrate, potassium beta-hydroxybutyrate, calcium beta-hydroxybutyrate, and magnesium beta-hydroxybutyrate.

33. The use of claim 32, wherein the at least one beta-hydroxybutyrate compound is included in the medicament in an amount between 2 grams and 50 grams and the at least one medium chain fatty acid or ester thereof is included in the medicament in an amount between 5 grams and 50 grams.

34. The use of claim 31 or 32, wherein the at least one beta-hydroxybutyrate compound is included in the medicament in an amount between 5 grams and 30 grams and the at least one medium chain fatty acid or ester thereof is included in the medicament in an amount between 10 grams and 40 grams.

35. The use of claim 31 or 32, wherein the at least one beta-hydroxybutyrate compound is included in the medicament in an amount between 10 grams and 20 grams and the at least one medium chain fatty acidor ester thereof is included in the medicament in an amount between 15 grams and 30 grams.

36. The use of claim 31, wherein the at least one beta-hydroxybutyrate compound comprises a salt mixture comprising a plurality of sodium beta-hydroxybutyrate, potassium beta-hydroxybutyrate, calcium beta-hydroxybutyrate, and magnesium beta-hydroxybutyrate.

37. The use of claim 31 or 32, wherein the at least one medium chain fatty acid or ester thereof is selected from the group consisting of medium chain triglycerides, coconut oil, coconut milk powder, fractionated coconut oil, palm kernel oil, isolated hexanoic acid, isolated octanoic acid, isolated decanoic acid, ethoxylated triglyceride, enone triglyceride derivatives thereof, aldehyde triglyceride derivatives thereof, monoglyceride derivatives thereof, diglyceride derivatives thereof, triglyceride derivatives thereof, and an alkyl ester thereof.

38. The use of claim 31 or 32, wherein the medicament further comprises at least one additional component selected from the group consisting of amino acids, amino acid metabolites, vitamins, minerals, coconut milk powder, electrolytes, NADH, tetrahydrobiopeterin, alpha-ketoglutaric acid, alpha lipoic acid, nutritional co-factors, calcium beta-methyl-beta-hydroxybutyrate, arginine alpha-ketoglutarate, sodium R-alpha lipoic acid, thiamine, riboflavin, niacin, pyridoxine, ascorbic acid, citric acid, malic acid, sodium benzoate, potassium sorbate, acesulfame K, aspartame, xanthan gum, and combinations thereof.

39. The use of claim 31 or 32, wherein the medicament is formulated to be administered at least once a day for between one and two weeks, and with the mammal restricting intake of carbohydrates and protein.

40. Use of a composition for the manufacture of a medicament for suppressing appetite or promoting weight loss in a mammal to therapeutically treat obesity, the medicament comprising: at least one medium chain fatty acid or ester thereof; and at least one beta-hydroxybutyrate compound, wherein the at least one beta-

hydroxybutyrate compound is comprised of a beta-hydroxybutyrate monomer salt,

wherein one or more doses of the medicament provide between 2 grams and 50 grams of the at least one beta-hydroxybutyrate compound and between 5 grams and 50 grams of the at least one medium chain fatty acid or ester.

41. Use of a composition for the manufacture of a medicament for suppressing appetite or promoting weight loss in a mammal to therapeutically treat obesity, the medicament comprising:

at least one medium chain fatty acid or ester thereof; and

a beta-hydroxybutyrate compound mixture comprising sodium beta-hydroxybutyrate, potassium beta-hydroxybutyrate, calcium beta-hydroxybutyrate, and magnesium beta-hydroxybutyrate.

42. The use of claim 40, wherein the at least one beta-hydroxybutyrate compound is included in the medicament in an amount between 2 grams and 50 grams and the at least one medium chain fatty acid or ester thereof is included in the medicament in an amount between 5 grams and 50 grams.

43. The use of claim 40 or 41, wherein the at least one beta-hydroxybutyrate compound is included in the medicament in an amount between 5 grams and 30 grams and the at least one medium chain fatty acid or ester thereof is included in the medicament in an amount between 10 grams and 40 grams.

44. The use of claim 40 or 41, wherein the at least one beta-hydroxybutyrate compound is included in the medicament in an amount between 10 grams and 20 grams and the at least one medium chain fatty acidor ester thereof is included in the medicament in an amount between 15 grams and 30 grams.

45. The use of claim 40, wherein the at least one beta-hydroxybutyrate compound comprises a salt mixture comprising a plurality of sodium beta-hydroxybutyrate,

potassium beta-hydroxybutyrate, calcium beta-hydroxybutyrate, and magnesium beta-hydroxybutyrate.

46. The use of claim 40 or 41, wherein the at least one medium chain fatty acid or ester thereof is selected from the group consisting of medium chain triglycerides, coconut oil, coconut milk powder, fractionated coconut oil, palm kernel oil, isolated hexanoic acid, isolated octanoic acid, isolated decanoic acid, ethoxylated triglyceride, enone triglyceride derivatives thereof, aldehyde triglyceride derivatives thereof, monoglyceride derivatives thereof, diglyceride derivatives thereof, triglyceride derivatives thereof, and an alkyl ester thereof.

47. The use of claim 40 or 41, wherein the medicament further comprises at least one additional component selected from the group consisting of amino acids, amino acid metabolites, vitamins, minerals, coconut milk powder, electrolytes, NADH, tetrahydrobiopeterin, alpha-ketoglutaric acid, alpha lipoic acid, nutritional co-factors, calcium beta-methyl-beta-hydroxybutyrate, arginine alpha-ketoglutarate, sodium R-alpha lipoic acid, thiamine, riboflavin, niacin, pyridoxine, ascorbic acid, citric acid, malic acid, sodium benzoate, potassium sorbate, acesulfame K, aspartame, xanthan gum, and combinations thereof.

48. The use of claim 40 or 41, wherein the medicament is formulated to be administered at least once a day for between one and two weeks, and with the mammal restricting intake of carbohydrates and protein.

49. A composition, comprising: a medium chain fatty acid or ester thereof in an amount between 5 grams and 50 grams, the medium chain fatty acid or ester thereof consisting of a medium chain fatty acid; and at least one beta-hydroxybutyrate compound in an amount between 2 grams and 50 grams, wherein the at least one beta-hydroxybutyrate compound comprises a salt mixture comprising a plurality of sodium beta-hydroxybutyrate, potassium beta-

hydroxybutyrate, calcium beta-hydroxybutyrate, and magnesium beta-hydroxybutyrate.