What is claimed is:

1. A composition, comprising:
at least one medium chain fatty acid or ester thereof; and
at least one beta-hydroxybutyrate compound, wherein the beta-hydroxybutyrate compound is composed of a beta-hydroxybutyrate salt, beta-hydroxybutyrate precursor, or combination thereof.

2. The composition of claim 1, wherein the at least one beta-hydroxybutyrate compound comprises one or more of:
a beta-hydroxybutyrate 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, ornithine beta-hydroxybutyrate, creatine beta-hydroxybutyrate, agmatine beta-hydroxybutyrate, or citrulline beta-hydroxybutyrate;
a salt mixture further comprising beta-hydroxy butyrate sodium salt, beta-hydroxy butyrate potassium salt, beta-hydroxy butyrate calcium salt, beta-hydroxy butyrate magnesium salt or combination thereof;
1,3-butanediol, ethyl acetoacetate, or ethyl beta-hydroxybutyrate; or
a combination of a beta-hydroxybutyrate salt and 1,3-butanediol, ethyl acetoacetate, or ethyl beta-hydroxybutyrate, or a salt mixture and 1,3-butanediol, ethyl acetoacetate, or ethyl beta-hydroxybutyrate.

3. The composition of claim 1 or 2, wherein the at least one beta-hydroxy compound comprises:
sodium beta-hydroxybutyrate, arginine beta-hydroxybutyrate, or a combination thereof; or
a combination of beta-hydroxy butyrate sodium salt and beta-hydroxy butyrate potassium salt.

4. The composition of any one of claims 1 to 3, wherein the at least one beta-hydroxybutyrate compound is composed of histidine beta-hydroxybutyrate, ornithine beta-hydroxybutyrate, creatine beta-hydroxybutyrate, agmatine beta-hydroxybutyrate, or citrulline beta-hydroxybutyrate.

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

6. The composition of any one of claims 1 to 5, wherein the at least one beta-hydroxy butyrate compound is included in an amount between about 2 grams and about 50 grams, or between about 5 grams and about 30 grams, or between about 10 grams and about 20 grams by weight of the composition.

7. The composition of any one of claims 1 to 6, 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, or isolated decanoic acid.

8. The composition of any one of claims 1 to 7, wherein the at least one medium chain triglyceride is included in an amount between about 5 grams and about 50 grams, or between about 10 grams and about 40 grams, or between about 15 grams and about 30 grams by weight of the composition.

9. The composition of any one of claims 1 to 8, wherein the composition further comprises at least one non-toxic mineral salt.

10. The composition of any one of claims 1 to 9, 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.

11. A method of promoting ketosis in a mammal, comprising administering the composition of any one of claims 1 to 10.

12. The method of claim 11, wherein the at least one beta-hydroxybutyrate compound is selected from the group consisting of a beta-hydroxy butyrate sodium salt, beta-hydroxy butyrate potassium salt, beta-hydroxy butyrate calcium salt, beta-hydroxy butyrate magnesium salt, sodium beta-hydroxybutyrate, arginine beta-hydroxybutyrate, beta-hydroxy butyrate sodium salt and beta-hydroxy butyrate potassium salt, lysine beta-hydroxybutyrate, histidine beta-hydroxybutyrate, ornithine beta-hydroxybutyrate, creatine beta-hydroxybutyrate, agmatine beta-hydroxybutyrate, or citrulline beta-hydroxybutyrate, and combinations thereof.

13. The method of claim 11 or 12, wherein the at least one medium chain fatty acid or ester thereof is composed of coconut oil, coconut milk powder, fractionated coconut 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, or an alkyl ester thereof.

14. The method of any one of claims 11 to 13, wherein the composition 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.

15. The method of any one of claims 11 to 14, wherein the at least one beta-hydroxybutyrate compound is sodium salt of β-hydroxybutyrate and potassium salt of β-hydroxybutyrate, and

wherein the at least one medium chain triglyceride and beta-hydroxybutyrate salt mixture is at a ratio of 1:1 β-hydroxybutyrate salt to medium chain triglyceride.

16. The method of any one of claims 11 to 15, wherein the at least one beta-hydroxybutyrate compound comprises 11 grams sodium β-hydroxybutyrate, 7.1 grams potassium β-hydroxybutyrate, and 26 g of medium chain triglyceride oil.

17. The method of any one of claims 11 to 16, wherein the composition is administered for between one and two weeks, and wherein the method further comprises the patient restricting intake of carbohydrates and protein.

18. The method of any one of claims 11 to 17, wherein the composition is administered once per day, twice per day, or three times per day to a patient in need thereof.

19. A method of suppressing appetite and/or promoting weight loss in a mammal, comprising

administering a composition as in any one of claims 1 to 10.

20. The method of any one of claims 11 to 19, wherein the mammal is a human.

21. The method of any one of claims 11 to 19, wherein the mammal is a non-human.

22. Use of the composition of any one of claims 1 to 10 for the preparation of a medicament for promoting ketosis in a mammal.

23. The use of claim 22, wherein the composition is used to suppress appetite in a mammal.

24. The use of claim 22 or 23, wherein the composition is used to promote weight loss in a mammal.

25. The composition of any one of claims 1 to 10, for use as a medicament.

26. The composition of any one of claims 1 to 10, for use in promoting ketosis in a mammal.

What is claimed is:

1. A composition, comprising: at least one medium chain fatty acid or ester thereof in an amount between about 5 grams and about 50 grams; and at least one beta-hydroxybutyrate compound in an amount between about 2 grams and about 50 grams, wherein the at least one beta-hydroxybutyrate compound is comprised of a beta-hydroxybutyrate salt.

2. The composition of claim 1, wherein the at least one beta-hydroxybutyrate compound comprises one or more of a beta-hydroxybutyrate 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, ornithine beta-hydroxybutyrate, creatine beta-hydroxybutyrate, agmatine beta-hydroxybutyrate, or citrulline beta-hydroxybutyrate.

3. 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.

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

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

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

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

8. The composition of claim 1, wherein the at least one medium chain triglyceride or ester thereof is included in an amount between about 10 grams and about 40 grams.

9. The composition of claim 1, wherein the at least one medium chain triglyceride or ester thereof is included in an amount between about 15 grams and about 30 grams.

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

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

12. The composition of claim 1, 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, or an alkyl ester thereof.

13. The composition of claim 1, 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.

14. The composition of claim 11, 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 14, 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.

16. The composition of claim 1, 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.

17. Use of a composition in the manufacture of a medicament for the inducement of sustained ketosis in a mammal, the composition 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 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 ketosis in a mammal for at least 240 minutes.

18. The use of claim 17, wherein the at least one beta-hydroxybutyrate compound is included in the medicament in an amount between about 5 grams and about 30 grams.

19. The use of claim 17, wherein the at least one beta-hydroxybutyrate compound is included in the medicament in an amount between about 10 grams and about 20 grams.

20. The use of claim 17, wherein the at least one medium chain triglyceride or ester thereof is included in the medicament in an amount between about 10 grams and about 40 grams.

21. The use of claim 17, wherein the at least one medium chain triglyceride or ester thereof is included in the medicament in an amount between about 15 grams and about 30 grams.

22. The use of claim 17, wherein the at least one beta-hydroxybutyrate compound is included in the medicament in an amount between about 5 grams and about 30 grams and the at least one medium chain triglyceride or ester thereof is included in the medicament in an amount between about 10 grams and about 40 grams.

23. The use of claim 17, wherein the at least one beta-hydroxybutyrate compound is included in the medicament in an amount between about 10 grams and about 20 grams and the at least one medium chain triglyceride or ester thereof is included in the medicament in an amount between about 15 grams and about 30 grams.

24. The use of claim 17, wherein the at least one beta-hydroxybutyrate compound comprises one or more of a beta-hydroxybutyrate 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.

25. The use of claim 17, 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.

26. The use of claim 17, wherein the at least one beta-hydroxybutyrate compound is comprised of (i) a beta-hydroxybutyrate salt and 1,3-butanediol, (ii) a beta-hydroxybutyrate salt and ethyl acetoacetate, (iii) a beta-hydroxybutyrate salt and ethyl beta-hydroxybutyrate, (iv) a salt mixture of beta-hydroxybutyrate salts and 1,3-butanediol, (v) a salt mixture of beta-hydroxybutyrate salts and ethyl acetoacetate, or (vi) a salt mixture of beta-hydroxybutyrate salts and ethyl beta-hydroxybutyrate.

27. The use of claim 17, 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, or an alkyl ester thereof.

28. The use of claim 17, 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.

29. Use of a composition for the manufacture of a medicament for promoting or sustaining ketosis in a mammal, the medicament comprising: at least one medium chain fatty acid or ester thereof in an amount between about 5 grams and about 50 grams; and at least one beta-hydroxybutyrate compound in an amount between about 2 grams and about 50 grams, wherein the at least one beta-hydroxybutyrate compound is comprised of a beta-hydroxybutyrate salt.

30. The use of claim 29, wherein the at least one beta-hydroxybutyrate compound is included in the medicament in an amount between about 5 grams and about 30 grams and the at least one medium chain triglyceride or ester thereof is included in the medicament in an amount between about 10 grams and about 40 grams.

31. The use of claim 29, wherein the at least one beta-hydroxybutyrate compound is included in the medicament in an amount between about 10 grams and about 20 grams and the at least one medium chain triglyceride or ester thereof is included in the medicament in an amount between about 15 grams and about 30 grams.

32. The use of claim 29, 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.

33. The use of claim 29, 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, or an alkyl ester thereof.

34. The use of claim 29, 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.

35. The use of claim 29, 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.

36. Use of a composition for the manufacture of a medicament for suppressing appetite or promoting weight loss in a mammal, the medicament comprising: at least one medium chain fatty acid or ester thereof in an amount between about 5 grams and about 50 grams; and at least one beta-hydroxybutyrate compound in an amount between about 2 grams and about 50 grams, wherein the at least one beta-hydroxybutyrate compound is comprised of a beta-hydroxybutyrate salt.

37. The use of claim 36, wherein the at least one beta-hydroxybutyrate compound is included in the medicament in an amount between about 5 grams and about 30 grams and the at least one medium chain triglyceride or ester thereof is included in the medicament in an amount between about 10 grams and about 40 grams.

38. The use of claim 36, wherein the at least one beta-hydroxybutyrate compound is included in the medicament in an amount between about 10 grams and about 20 grams and the at least one medium chain triglyceride or ester thereof is included in the medicament in an amount between about 15 grams and about 30 grams.

39. The use of claim 36, 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.

40. The use of claim 36, 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, or an alkyl ester thereof.

41. The use of claim 36, 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.

42. The use of claim 36, 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.

43. A composition, comprising: a medium chain fatty acid or ester thereof in an amount between about 15 grams and about 30 grams, the medium chain fatty acid or ester thereof consisting of a medium chain triglyceride; and at least one beta-hydroxybutyrate compound in an amount between about 10 grams and about 20 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, or magnesium beta-hydroxybutyrate.