CLAIMS

1. A lipid component, wherein the lipid component consists of a milk lipid component and an optional non-milk lipid component.

2. The lipid component of claim 1, wherein the milk lipid component consists of a single milk lipid.

3. The lipid component of claim 2, wherein the single milk lipid is a mTAG.

~~4. The lipid component of claim 2, wherein the single milk lipid is a mDAG.~~

~~5. The lipid component of claim 2, wherein the single milk lipid is a mMAG.~~

~~6. The lipid component of claim 2, wherein the single milk lipid is a mPL.~~

~~7. The lipid component of claim 2, wherein the single milk lipid is a milk sterol.~~

~~8. The lipid component of claim 2, wherein the single milk lipid is a mFFA.~~

~~9. The milk lipid component of claim 1, wherein the milk lipid component consists of two or more distinct milk lipids.~~

~~10. The milk lipid component of claim 9, wherein the two or more distinct milk lipids comprise a mTAG.~~

~~11. The milk lipid component of claim 9, wherein the two or more distinct milk lipids comprise a mDAG.~~

~~12. The milk lipid component of claim 9, wherein the two or more distinct milk lipids comprise a mMAG.~~

~~13. The milk lipid component of claim 9, wherein the two or more distinct milk lipids comprise a mPL.~~

~~14. The milk lipid component of claim 9, wherein the two or more distinct milk lipids comprise a milk sterol.~~

~~15. The milk lipid component of claim 9, wherein the two or more distinct milk lipids comprise a mFFA.~~

~~16.~~4. The lipid component of claim 3~~ or 10~~, wherein the mTAG comprises a fatty acid in sn1, sn2, and/or sn3 position that has a carbon atom number that ranges from 4 to 24.

~~17.~~5. The lipid component of claim 4~~16~~, wherein the fatty acid is selected from the group consisting of butyric acid (C4:0), caproic acid (C6:0), caprylic acid (C8:0), capric acid (C10:0), lauric acid (C12:0), myristic acid (C14:0), pentadecanoic acid (C15:0), palmitic acid (C16:0), palmitoleic acid (C16:1), margaric acid (C17:0), stearic acid (C18:0), oleic acid (C18:1), linoleic acid (C18:2), linolenic acid (C18:3), and vaccenic acid (C18:1 trans11).

~~18. The milk lipid component of claim 3 or 10, wherein the mTAG comprises a single fatty acid having a carbon atom number that ranges from 4 to 24.~~

~~19. The milk lipid component of claim 18, wherein the single fatty acid is saturated.~~

~~20. The milk lipid component of claim 3 or 10, wherein the mTAG comprises two fatty acids each having a carbon atom number that ranges from 4 to 24.~~

~~21. The milk lipid component of claim 20, wherein one of the two fatty acids is saturated.~~

~~22. The milk lipid component of claim 20, wherein both of the two fatty acids are saturated.~~

~~23.~~6. The milk lipid component of claim 3 ~~or 10~~, wherein the mTAG comprises three fatty acids each having a carbon atom number that ranges from 4 to 24.

~~24. The lipid component of claim 23, wherein one of the three fatty acids is saturated.~~

~~25. The lipid component of claim 23, wherein two of the three fatty acids are saturated.~~

~~26.~~7. The lipid component of claim 6~~23~~, wherein all of the three fatty acids are saturated.

~~27.~~8. The lipid component of claim 3 ~~or 10~~, wherein the mTAG comprises a fatty acid in sn3 position that is saturated and has a carbon atom number that ranges from 4 to 10.

~~28.~~9. The lipid component of claim 8~~27~~, wherein the fatty acid is selected from the group consisting of butyric acid (C4:0), caproic acid (C6:0), and caprylic acid (C8:0).

~~29.~~10. The lipid component of claim 3 ~~or 10~~, wherein the mTAG comprises a fatty acid in sn2 position that is saturated and has a carbon atom number that ranges from 8 to 16.

~~30.~~11. The milk lipid component of claim 10~~29~~, wherein the fatty acid is selected from the group consisting of caprylic acid (C8:0), capric acid (C10:0), lauric acid (C12:0), myristic acid (C14:0), pentadecanoic acid (C15:0), and palmitic acid (C16:0).

~~31.~~12. The lipid component of claim 3 ~~or 10~~, wherein the mTAG comprises a fatty acid in sn1 and/or sn3 position that has a carbon atom number that ranges from 18 to 24.

~~32.~~13. The lipid component of claim 12~~31~~, wherein the fatty acid is selected from the group consisting of stearic acid (C18:0) and oleic acid (C18:1).

~~33. The lipid component of claim 3 or 10, wherein the mTAG has a first fatty acid in sn1 position that has a carbon atom number that ranges from 16 to 54, and a second fatty acid in sn2 position that is saturated and has a carbon atom number that ranges from 8 to 16.~~

~~34. The lipid component of claim 33, wherein the first fatty acid is selected from the group consisting of palmitic acid (C16:0), palmitoleic acid (C16:1), margaric acid (C17:0), stearic acid (C18:0), oleic acid (C18:1), linoleic acid (C18:2), linolenic acid (C18:3), and vaccenic acid (C18:1 trans11); and wherein the second fatty acid is selected from the group consisting of caprylic acid (C8:0), capric acid (C10:0), lauric acid (C12:0), myristic acid (C14:0), pentadecanoic acid (C15:0), palmitic acid (C16:0), and palmitoleic acid (C16:1).~~

~~35. The lipid component of claim 3 or 10, wherein the mTAG has a first fatty acid in sn1 position that has a carbon atom number that ranges from 16 to 54, and a second fatty acid in sn3 position that has a carbon atom number that ranges from 4 to 10.~~

~~36. The lipid component of claim 35, wherein the first fatty acid is selected from the group consisting of palmitic acid (C16:0), palmitoleic acid (C16:1), margaric acid (C17:0), stearic acid (C18:0), oleic acid (C18:1), linoleic acid (C18:2), linolenic acid (C18:3), and vaccenic acid (C18:1 trans11); and wherein the second fatty acid is selected from the group consisting of butyric acid (C4:0), caproic acid (C6:0), caprylic acid (C8:0), and capric acid (C10:0).~~

~~37. The lipid component of claim 3 or 10, wherein the mTAG has a first fatty acid in sn2 position that has a carbon atom number that ranges from 8 to 16, and a second fatty acid in sn3 position that has a carbon atom number that ranges from 4 to 10.~~

~~38. The lipid component of claim 37, wherein the first fatty acid is selected from the group consisting of caprylic acid (C8:0), capric acid (C10:0), lauric acid (C12:0), myristic acid (C14:0), pentadecanoic acid (C15:0), palmitic acid (C16:0), and palmitoleic acid (C16:1); and wherein the second fatty acid is selected from the group consisting of butyric acid (C4:0), caproic acid (C6:0), caprylic acid (C8:0), and capric acid (C10:0).~~

~~39. The lipid component of claim 3 or 10, wherein the mTAG has a first fatty acid in sn2 position that has a carbon atom number that ranges from 16 to 54, and a second fatty acid in sn3 position that has a carbon atom number that ranges from 4 to 10.~~

~~40. The lipid component of claim 39, wherein the first fatty acid is selected from the group consisting of palmitic acid (C16:0), palmitoleic acid (C16:1), margaric acid (C17:0), stearic acid (C18:0), oleic acid (C18:1), linoleic acid (C18:2), linolenic acid (C18:3), and vaccenic acid (C18:1 trans11); and wherein the second fatty acid is selected from the group consisting of butyric acid (C4:0), caproic acid (C6:0), caprylic acid (C8:0), and capric acid (C10:0).~~

~~41. The lipid component of claim 3 or 10, wherein the mTAG has a first fatty acid in sn1 position that has a carbon atom number that ranges from 8 to 16, and a second fatty acid in sn3 position that has a carbon atom number that ranges from 4 to 10.~~

~~42. The lipid component of claim 41, wherein the first fatty acid is selected from the group consisting of caprylic acid (C8:0), capric acid (C10:0), lauric acid (C12:0), myristic acid (C14:0), pentadecanoic acid (C15:0), palmitic acid (C16:0), and palmitoleic acid (C16:1); and the second fatty acid is selected from the group consisting of butyric acid (C4:0), caproic acid (C6:0), caprylic acid (C8:0), and capric acid (C10:0).~~

~~43.~~14. The lipid component of claim 3~~ or 10~~, wherein the mTAG has a first fatty acid in sn1 position that has a carbon atom number that ranges from 16 to 54, a second fatty acid in sn2 position that has a carbon atom number that ranges from 8 to 16, and a third fatty acid in sn3 position that has a carbon atom number that ranges from 4 to 10.

~~44.~~15. The lipid component of claim 14~~43~~, wherein the first fatty acid is selected from the group consisting of palmitic acid (C16:0), palmitoleic acid (C16:1), margaric acid (C17:0), stearic acid

(C18:0), oleic acid (C18:1), linoleic acid (C18:2), linolenic acid (C18:3), and vaccenic acid (C18:1 trans11); the second fatty acid is selected from the group consisting of caprylic acid (C8:0), capric acid (C10:0), lauric acid (C12:0), myristic acid (C14:0), pentadecanoic acid (C15:0), palmitic acid (C16:0), and palmitoleic acid (C16:1); and the third fatty acid is selected from the group consisting of butyric acid (C4:0), caproic acid (C6:0), caprylic acid (C8:0), and capric acid (C10:0).

~~45. The lipid component of claim 3 or 10, wherein the mTAG has a first fatty acid in sn1 position that has a carbon atom number that ranges from 16 to 54, a second fatty acid in sn2 position that has a carbon atom number that ranges from 16 to 54, and a third fatty acid in sn3 position that has a carbon atom number that ranges from 4 to 10.~~

~~46. The lipid component of claim 45, wherein the first fatty acid and the second fatty acid are independently selected from the group consisting of palmitic acid (C16:0), palmitoleic acid (C16:1), margaric acid (C17:0), stearic acid (C18:0), oleic acid (C18:1), linoleic acid (C18:2), linolenic acid (C18:3), and vaccenic acid (C18:1 trans11); and the third fatty acid is selected from the group consisting of butyric acid (C4:0), caproic acid (C6:0), caprylic acid (C8:0), and capric acid (C10:0).~~

~~47. The lipid component of claim 3 or 10, wherein the mTAG has a first fatty acid in sn1 position that has a carbon atom number that ranges from 8 to 16, a second fatty acid in sn2 position that has a carbon atom number that ranges from 16 to 54, and a third fatty acid in sn3 position that has a carbon atom number that ranges from 4 to 10.~~

~~48. The lipid component of claim 47, wherein the first fatty acid is selected from the group consisting of caprylic acid (C8:0), capric acid (C10:0), lauric acid (C12:0), myristic acid (C14:0), pentadecanoic acid (C15:0), palmitic acid (C16:0), and palmitoleic acid (C16:1); the second fatty acid is selected from the group consisting of palmitic acid (C16:0), palmitoleic acid (C16:1), margaric acid (C17:0), stearic acid (C18:0), oleic acid (C18:1), linoleic acid (C18:2), linolenic acid (C18:3), and vaccenic acid (C18:1 trans11); and the third fatty acid is selected from the group consisting of butyric acid (C4:0), caproic acid (C6:0), caprylic acid (C8:0), and capric acid (C10:0).~~

~~49. The lipid component of claim 3 or 10, wherein the mTAG has a first fatty acid in sn1 position that has a carbon atom number that ranges from 8 to 16, a second fatty acid in sn2 position that has a carbon atom number that ranges from 8 to 16, and a third fatty acid in sn3 position that has a carbon atom number that ranges from 4 to 10.~~

~~50. The lipid component of claim 49, wherein the first fatty acid and the second fatty acid are independently selected from the group consisting of caprylic acid (C8:0), capric acid (C10:0), lauric acid (C12:0), myristic acid (C14:0), pentadecanoic acid (C15:0), palmitic acid (C16:0), and~~

~~palmitoleic acid (C16:1); and the third fatty acid is selected from the group consisting of butyric acid (C4:0), caproic acid (C6:0), caprylic acid (C8:0), and capric acid (C10:0).~~

~~51. The lipid component of claim 3 or 10, wherein the mTAG has a first fatty acid in sn1 position that has a carbon atom number that ranges from 16 to 54, a second fatty acid in and sn2 position that has a carbon atom number that ranges from 16 to 54, and a third fatty acid in sn3 position that has a carbon atom number that ranges from 8 to 16.~~

~~52. The lipid component of claim 51, wherein the first fatty acid and the second fatty acid are independently selected from the group consisting of palmitic acid (C16:0), palmitoleic acid (C16:1), margaric acid (C17:0), stearic acid (C18:0), oleic acid (C18:1), linoleic acid (C18:2), linolenic acid (C18:3), and vaccenic acid (C18:1 trans11); and the third fatty acid is selected from the group consisting of caprylic acid (C8:0), capric acid (C10:0), lauric acid (C12:0), myristic acid (C14:0), pentadecanoic acid (C15:0), palmitic acid (C16:0), and palmitoleic acid (C16:1).~~

~~53. The lipid component of claim 3 or 10, wherein the mTAG has a first fatty acid in sn2 position that each has a carbon atom number that ranges from 8 to 16, a second fatty acid in sn3 position that has a carbon atom number that ranges from 8 to 16, and a third fatty acid in sn1 position that has a carbon atom number that ranges from 16 to 54.~~

~~54. The lipid component of claim 53, wherein the first fatty acid and the second fatty acid are independently selected from the group consisting of caprylic acid (C8:0), capric acid (C10:0), lauric acid (C12:0), myristic acid (C14:0), pentadecanoic acid (C15:0), palmitic acid (C16:0), and palmitoleic acid (C16:1); and the third fatty acid is selected from the group consisting of palmitic acid (C16:0), and palmitoleic acid (C16:1), margaric acid (C17:0), stearic acid (C18:0), oleic acid (C18:1), linoleic acid (C18:2), linolenic acid (C18:3), and vaccenic acid (C18:1 trans11).~~

~~55. The lipid component of claim 3 or 10, wherein the mTAG has a first fatty acid in sn1 position that has a carbon atom number that ranges from 16 to 54, a second fatty acid in sn2 position that has a carbon atom number that ranges from 4 to 10, and a third fatty acid in sn3 position that has a carbon atom number that ranges from 8 to 16.~~

~~56. The lipid component of claim 55, wherein the first fatty acid is selected from the group consisting of palmitic acid (C16:0), palmitoleic acid (C16:1), margaric acid (C17:0), stearic acid (C18:0), oleic acid (C18:1), linoleic acid (C18:2), linolenic acid (C18:3), and vaccenic acid (C18:1 trans11); the second fatty acid is selected from the group consisting of butyric acid (C4:0), caproic acid (C6:0), caprylic acid (C8:0), and capric acid (C10:0); and the third fatty acid is selected from the group consisting of caprylic acid (C8:0), capric acid (C10:0), lauric acid (C12:0), myristic acid (C14:0), pentadecanoic acid (C15:0), palmitic acid (C16:0), and palmitoleic acid (C16:1).~~

~~57.~~16. The lipid component of claim 3~~ or 10~~, wherein the mTAG has a first fatty acid in sn1 position that has a carbon atom number that ranges from 16 to 54, a second fatty acid in sn2

position that has a carbon atom number that ranges from 4 to 10, and a third fatty acid in sn3 position that has a carbon atom number that ranges from 4 to 10.

~~58.~~17. The lipid component of claim 16~~57~~, wherein the first fatty acid is selected from the group consisting of palmitic acid (C16:0), palmitoleic acid (C16:1), margaric acid (C17:0), stearic acid (C18:0), oleic acid (C18:1), linoleic acid (C18:2), linolenic acid (C18:3), and vaccenic acid (C18:1 trans11); and the second fatty acid and the third fatty acid are independently selected from the group consisting of butyric acid (C4:0), caproic acid (C6:0), caprylic acid (C8:0), and capric acid (C10:0).

~~59. The lipid component of claim 3 or 10, wherein the milk lipid component consists of one or more mTAGs having a structure selected from the group consisting of C16:0-C14:0-C4:0, C14:0-C16:0-C18:1, C16:0-C16:0-C18:1, C16:0-C16:0-C4:0, C18:1-C16:0-C4:0, C18:1(n-9)-C16:0-C14:0, C18:1(n-9)-C16:0-C16:0, C18:1(n-9)-C16:0-C4:0, C16:0-C18:1-C18:1, C4:0-C14:0-C16:0, C16:0-C16:0-C16:1, C4:0-C16:0-C16:0, C4:0-C16:0-C18:0, C4:0-C16:0-C18:1, C6:0-C14:0-C16:0, and C14:0-C18:0-C18:1.~~

~~60. The lipid component of claim 8 or 15, wherein the mFFA has a carbon atom number that ranges from 4 to 24.~~

~~61. The lipid component of claim 8 or 15, wherein the mFFA is selected from the group consisting of: butyric acid (C4:0), caproic acid (C6:0), caprylic acid (C8:0), capric acid (C10:0), lauric acid (C12:0), myristic acid (C14:0), pentadecanoic acid (C15:0), palmitic acid (C16:0), palmitoleic acid (C16:1), margaric acid (C17:0), stearic acid (C18:0), oleic acid (C18:1), linoleic acid (C18:2), linolenic acid (C18:3), and vaccenic acid (C18:1 trans11).~~

~~62.~~18. The lipid component of claim 1, wherein the milk lipid component is essentially free of one or more fatty acids having a carbon atom number of greater than 24.

~~63.~~19. The lipid component of claim 1, wherein the milk lipid component comprises one or more milk lipids at relative ratios found in a mammal-produced milk or milk fat.

~~64.~~20. The milk lipid component of claim 1, wherein the milk lipid component comprises one or more milk lipids at relative ratios not found in a mammal-produced milk or milk fat.

~~65.~~21. The lipid component of claim 1, wherein the milk lipid component has a fatty acid profile that is identical or similar to the fatty acid profile of a mammal-produced milk or milk fat.

~~66.~~22. The lipid component of claim 1, wherein the milk lipid component has a fatty acid profile that is different from the fatty acid profile of a mammal-produced milk or milk fat.

~~67.~~23. The lipid component of claim 1, wherein the milk lipid component comprises between 0% and 50% by mass of butyric acid (C4:0), between 0% and 50% by mass of caproic acid (C6:0), between 0% and 50% by mass of caprylic acid (C8:0), between 0% and 50% by mass of capric acid (C10:0), between 0% and 50% by mass of lauric acid (C12:0), between 0% and 50% by mass

of myristic acid (C14:0), between 0% and 50% by mass of pentadecanoic acid (C15:0), between 0% and 50% by mass of palmitic acid (C16:0), between 0% and 50% by mass of palmitoleic acid (C16:1), between 0% and 50% by mass of margaric acid (C17:0), between 0% and 50% by mass of stearic acid (C18:0), and/or between 0% and 50% by mass of oleic acid (C18:1).

~~68.~~24. The lipid component of claim 1, wherein the lipid component consists of a low-melting fraction.

~~69.~~25. The lipid component of claim 1, wherein the lipid component consists of a medium-melting fraction.

~~70.~~26. The lipid component of claim 1, wherein the lipid component consists of a high-melting melting fraction.

~~71.~~27. The lipid component of claim 1, wherein the lipid component consists of a low-melting fraction and a medium-melting fraction.

~~72.~~28. The lipid component of claim 1, wherein the lipid component consists of a low-melting fraction and a high-melting fraction.

~~73.~~29. The lipid component of claim 1, wherein the lipid component consists of a medium-melting fraction and a high-melting fraction.

~~74.~~30. The lipid component of claim 1, wherein the lipid component consists of a low-melting fraction, a medium-melting fraction, and a high-melting fraction.

~~75.~~31. The lipid component of claim 1, wherein the lipid component comprises solid lipid at ambient temperature and conditions.

~~76.~~32. The lipid component of claim 1, wherein the lipid component comprises solid lipid at body temperature and conditions.

~~77.~~33. The lipid component of claim 1, wherein the lipid component has a flavor/aroma profile that is similar to that of a mammal-produced milk fat.

~~78.~~34. The lipid component of claim 1, wherein the lipid component has a flavor/aroma profile that is bland.

~~79.~~35. The lipid component of claim 1, wherein the lipid component has an emulsifying potential that is similar to that of a mammal-produced milk fat.

~~80.~~36. The lipid component of claim 1, wherein the lipid component has an emulsifying potential that is greater than that of soybean oil.

~~81.~~37. The lipid component of claims 1, wherein the lipid component comprises between 0.001% and 100% by mass of the milk lipid component.

~~82.~~38. The lipid component of claims 1, wherein the lipid component comprises between 0.01% and 90% by mass of the optional non-milk lipid component.

~~83.~~39. The lipid component of claims 1, wherein the lipid component comprises the milk lipid component and the optional non-milk lipid component at a mass ratio of between 100 to 1 and 1 to 100.

~~84. A composition comprising the lipid component of claim 1, wherein the composition comprises no other lipid than the lipids of which the lipid component consists.~~

~~85. The composition of claim 84, wherein the composition further comprises a milk protein component.~~

~~86. The composition of claim 85, wherein the milk protein component consists of a single milk protein.~~

~~87. The composition of claim 86, wherein the single milk protein is selected from the group consisting of β-lactoglobulin, α-lactalbumin, κ-casein, β-casein, and γ-casein.~~

~~88. The composition of claim 85, wherein the milk protein component consists of a two or more milk proteins.~~

~~89. The composition of claim 88, wherein the two or more milk proteins are selected from the group consisting of two or more whey proteins, two or more caseins, and a mixture of one or more whey proteins and one or more caseins.~~

~~90. The composition of claim 89, wherein the whey proteins are selected from the group consisting of β-lactoglobulin, α-lactalbumin, serum albumin, immunoglobulins, lactoferrin, glycomacropeptide, and transferrin.~~

~~91. The composition of claim 89, wherein the casein proteins are selected from the group consisting of κ-casein, β-casein, γ-casein, α-S1-casein, and α-S2-casein.~~

~~92. The composition of claim 85, wherein the milk protein component consists of or comprises a recombinant milk protein.~~

~~93. The composition of claim 92, wherein the recombinant milk protein has a non-mammalian post-translational modification (PTM).~~

~~94. The composition of claim 84, wherein the composition further comprises a non-milk protein component.~~

~~95. The composition of claim 84, wherein the composition comprises a milk protein component and a non-milk protein component at a mass ratio of between about 100 to 1 and about 1 to 100.~~

~~96. The composition of claim 84, wherein the composition comprises a milk fat globule-like structure component.~~

~~97. The composition of claim 96, wherein the milk fat globule-like structure component comprises milk globule-like structures having an average diameter of between 0.2 μm and 15 μm.~~

98. The composition of claim 96, wherein the milk fat globule-like structure component comprises milk globule-like structures that comprise a milk lipid and a milk protein.

99. The composition of claim 84, wherein the composition is a powder.

100. The composition of claim 84, wherein the composition is an emulsion.

101. The composition of claim 100, wherein the emulsion comprises dispersed phase droplets having an average diameter of between 0.1 μm and 15 μm.

102. The composition of claim 100, wherein the emulsion comprises dispersed phase droplets that are engulfed in a membrane.

103. The composition of claim 84, wherein the composition comprises a flavor/aroma agent.

104. The composition of claim 103, wherein the flavor/aroma agent is a milk volatile organic compound.

105. The composition of claim 103, wherein the flavor/aroma agent is a green leaf volatile organic compound.

106. The composition of claim 105, wherein the green leaf volatile organic compound is obtained by chemical and/or enzymatic degradation of linoleic acid or linolenic acid.

107. The composition of claim 105, wherein the green leaf volatile organic compound is selected from the group consisting of hexanal, (Z)-3-hexenyl acetate, (Z)-3-hexenal, (Z)-3-hexenol, (Z)-2-hexenol, (E)-3-hexenol, (E)-2-hexenol, (E)-2-hexenal, (Z)-3-nonenol, €-2-nonenol, and 2,4-decadienal.

108. The composition of claim 84, wherein the composition is a food product.

109. The composition of claim 108, wherein the food product is selected from the group consisting of an egg, an egg product, an egg substitute, an egg product substitute, a milk, a dairy product, a milk substitute, a dairy product substitute, an animal meat, an animal meat product, an animal meat substitute, and an animal meat product substitute.

110. A method for producing the lipid component of claim 1, wherein the method comprises the step of obtaining a milk lipid or milk lipid precursor.

111. The method of claim 110, wherein the milk lipid or milk lipid precursor is obtained by production in a recombinant host cell.

112. The method of claim 111, wherein the production in a recombinant host cell comprises the step of culturing a recombinant host cell capable of producing the milk lipid or milk lipid precursor under conditions suitable for production of the milk lipid or milk lipid precursor.

113. The method of claim 110, wherein the milk lipid is obtained by chemical or enzymatic modification of a milk lipid precursor.

114. The method of claim 113, wherein the chemical or enzymatic modification of the milk lipid precursor comprises chemical or enzymatic inter-esterification.

115. The method of claim 114, wherein the enzymatic inter-esterification is accomplished with a lipase that has selectivity for a fatty acid having a carbon atom number of between 4 and 24.

116. A recombinant host cell capable of producing a milk lipid or a milk lipid precursor, wherein the recombinant host cell comprises a genetic modification that essentially eliminates or modulates production and/or activity of a lipid biosynthesis-related protein.

117. The recombinant host cell of claim 116, wherein the lipid biosynthesis-related protein is selected from the group consisting of:

a. enzymes with activity in the production of unsaturated fatty acids;

b. enzymes with activity in the production of fatty acids having a carbon atom number of greater than 16;

c. enzymes with activity in the production of fatty acids having a carbon atom number of 16 or less;

d. enzymes with activity in the b-oxidation pathway or peroxisome biogenesis;

e. enzymes with activity in the production of cytosolic acetyl-CoA;

f. enzymes with activity in the production of a TAG, DAG, MAG, and/or PL;

g. enzymes with activity in the production of an amino acid;

h. enzymes with activity in the production of cytosolic NADPH;

i. enzymes with activity in inter-esterification or trans-esterification; and

j. combinations thereof.

118. The recombinant host cell of claim 116, wherein the genetic modification consists of a single genetic modification.

119. The recombinant host cell of claim 116, wherein the genetic modification consists of two or more genetic modifications.

120. The recombinant host cell of claim 116, wherein the lipid biosynthesis-related protein consists of a single lipid biosynthesis-related protein.

121. The recombinant host cell of claim 116, wherein the lipid biosynthesis-related protein consists of two or more lipid biosynthesis-related proteins.

122. The recombinant host cell of claim 116, wherein the recombinant host cell is a recombinant microbial cell.

123. The recombinant host cell of claim 122, wherein the recombinant microbial cell in a recombinant fungal cell.

124. The recombinant host cell of claim 123, wherein the recombinant fungal cell is a recombinant yeast cell.

125. The recombinant host cell of claim 123, wherein the recombinant fungal cell is a recombinant filamentous fungal cell.

~~126. The recombinant host cell of claim 122, wherein the recombinant microbial cell is a recombinant bacterial cell.~~

~~127. The recombinant host cell of claim 116, wherein the recombinant host cell is an oleaginous cell.~~

~~128. A method for producing a food product, wherein the method comprises the step of combining the lipid component of claim 1 with other ingredients.~~

~~129. The method of claim 128, wherein the method comprises the step of fermenting the lipid component of claim 1 using a microbial cell.~~