What is claimed is:

1. An edible composition comprising an algae preparation derived from Chlamydomonas sp., wherein the algae preparation comprises heme and imparts a red or red-like color to the edible composition.

2. The edible composition of claim 1, wherein the algae preparation is an algal biomass.

3. The edible composition of claim 1, wherein the algae preparation is a fractionated preparation derived from algae cells.

4. The edible composition of claim 1, wherein the algae preparation is a powder having a red or red-like color.

5. The edible composition of any one of claims 1-4, wherein the *Chlamydomonas sp.* of the algae preparation comprises a genetic modification that results in enriched heme content of the algae.

6. The edible composition of claim 5, wherein the genetic modification comprises a genetic alteration to a chlorophyll synthesis pathway gene, a protoporphyrinogen IX synthesis pathway gene or a heme synthesis pathway gene.

7. The edible composition of any one of claims 1-6, wherein the algae preparation comprises a heme content that is greater than the chlorophyll content.

8. The edible composition of any one of claims 1-7, wherein the *Chlamydomonas* sp. is *Chlamydomonas reinhardtii*.

9. The edible composition of any one of claims 1-8, wherein the algae preparation further comprises protoporphyrin IX.

10. A food product comprising the edible composition of any one of claims 1-9.

11. The food product of claim 10 selected from the group consisting of a beef-like product, a fish-like product, a chicken-like product, a pork-like product and a meat replica.

12. The food product of claim 10 or claim 11, wherein the algae preparation imparts a red color or a red-like color to an uncooked form of the food product.

13. The food product of claim 10 or claim 11, wherein the algae preparation imparts a red color or a red-like color to a cooked form of the food product.

14. The edible composition of any one of claims 1-9, wherein the edible composition is an ingredient for a burger, a sausage, a kebab, a filet, a fish-alternative, a ground meat-like product or a meatball.

15. The food product of any one of claims 10-13, further comprising one or more of: a protein source, a fat source, a carbohydrate, a starch, and a thickener.

16. The food product of claim 15, wherein the protein source is selected from the group consisting of a wheat protein, a soy protein, a pea protein, a fungal protein, and an algal protein.

17. The edible composition of any one of claims 1-9, wherein the edible composition is free of animal proteins.

18. The edible composition of any one of claims 1-9, wherein the algae preparation provides omega-3 fatty acids to the edible composition.

19. A method for the production of an algal preparation comprising: (a) culturing an engineered algae, wherein the engineered algae is of a *Chlamydomonas* sp., under conditions wherein the algae accumulates heme and exhibits a red or red-like color; and (b) collecting the cultured engineered algae to produce an algae preparation.

20. The method of claim 19, wherein the algal preparation is an algal biomass.

21. The method of claim 19 or claim 20, further comprising drying the algal preparation to produce a red or red-like powder.

22. The method of any one of claims 19-21, further comprising (c) combining the algae preparation with at least one edible ingredient to produce an edible composition.

23. The method of any one of claims 19-22, wherein the engineered algae comprises engineering by one or more of UV mutagenesis, chemical mutagenesis, recombinant genetic engineering, gene editing, or gene silencing.