## CLAIMS

1. A dietary supplement comprising a C16:1n7-palmitoleate derivative and a palmitate derivative; wherein

   the supplement has a ratio of the C16:1n7-palmitoleate derivative to the palmitate derivative of about 20:1 to about 100:1; and

   each palmitoleate and palmitate derivative is independently selected from the group consisting of a free acid, pharmaceutically acceptable salt, ($C_1$-$C_4$)alkyl ester, monoglyceride, diglyceride, triglyceride and a combination thereof.

2. The dietary supplement of claim 1, comprising at least about 35 wt % of the C16:1n7-palmitoleate derivative.

3. The dietary supplement of claim 1, comprising at least about 50 wt % of the C16:1n7-palmitoleate derivative.

4. The dietary supplement of claim 1, comprising at least about 90 wt % of the C16:1n7-palmitoleate derivative.

5. The dietary supplement of claim 1, wherein the ratio of the C16:1n7-palmitoleate derivative to the palmitate derivative is about 20:1 to about 50:1.

6. The dietary supplement of claim 1, wherein the ratio of the C16:1n7-palmitoleate derivative to the palmitate derivative is about 50:1 to about 100:1.

7. The dietary supplement of claim 1, wherein all of the derivatives are ($C_1$-$C_4$)alkyl esters.

8. The dietary supplement of claim 1, wherein all of the derivatives are ethyl esters.

9. The dietary supplement of claim 1, wherein all of the derivatives are free acids or pharmaceutically acceptable salts thereof.

10. The dietary supplement of claim 1, wherein all of the derivatives are selected from the group consisting of monoglycerides, diglycerides, triglycerides and combinations thereof.

11. The dietary supplement of claim 1, wherein the supplement further comprises an oleate derivative, wherein the supplement has a ratio of the C16:1n7-palmitoleate derivative to the oleate derivative of about 6:1 to about 100:1, and each oleate derivative is independently selected from the group consisting of a free acid, pharmaceutically acceptable salt, ($C_1$-$C_4$)alkyl ester, monoglyceride, diglyceride, triglyceride and a combination thereof.

12. The dietary supplement of claim 11, wherein the ratio of the C16:1n7-palmitoleate derivative to the oleate derivative is about 10:1 to about 20:1.

13. The dietary supplement of claim 11, wherein the ratio of the C16:1n7-palmitoleate derivative to the oleate derivative is about 20:1 to about 50:1.

14. The dietary supplement of claim 11, wherein the ratio of the C16:1n7-palmitoleate derivative to the oleate derivative is about 50:1 to about 100:1.

15. The dietary supplement of claim 1, wherein the C16:1n7-palmitoleate derivative comprises a C16:1n7-palmitoleate moiety that is obtained from fish.

## CLAIMS

1. A dietary supplement comprising a C16:1n7-palmitoleate derivative and a palmitate derivative; wherein the supplement

i) has a ratio of the C16:1n7-palmitoleate derivative to the palmitate derivative of 20:1 to 100:1; and

(ii) comprises at least 20 wt % of the C16:1n7-palmitoleate derivative; and

each palmitoleate and palmitate derivative is independently a free acid, pharmaceutically acceptable salt, ($C_1$-$C_4$)alkyl ester, monoglyceride, diglyceride, triglyceride, or a combination of any two or more thereof.

2. The dietary supplement of claim 1, comprising at least 35 wt % of the C16:1n7-palmitoleate derivative.

3. The dietary supplement of claim 1, comprising at least 50 wt % of the C16:1n7-palmitoleate derivative.

4. The dietary supplement of claim 1, comprising at least 90 wt % of the C16:1n7-palmitoleate derivative.

5. The dietary supplement of claim 1, wherein the ratio of the C16:1n7-palmitoleate derivative to the palmitate derivative is 20:1 to 50:1.

6. The dietary supplement of claim 1, wherein the ratio of the C16:1n7-palmitoleate derivative to the palmitate derivative is 50:1 to 100:1.

7. The dietary supplement of claim 1, wherein all of the derivatives are ($C_1$-$C_4$)alkyl esters.

8. The dietary supplement of claim 1, wherein all of the derivatives are ethyl esters.

9. The dietary supplement of claim 1, wherein all of the derivatives are methyl esters.

10. The dietary supplement of claim 1, wherein all of the derivatives are free acids or pharmaceutically acceptable salts thereof.

11. The dietary supplement of claim 1, wherein all of the derivatives are monoglycerides, diglycerides, triglycerides or a combination of any two or more thereof.

12. The dietary supplement of claim 1, wherein the C16:1n7-palmitoleate derivative is a cis-C16:1n7-palmitoleate derivative.

13. The dietary supplement of claim 1, wherein the supplement further comprises an oleate derivative, wherein the supplement has a ratio of the C16:1n7-palmitoleate derivative to the oleate derivative of 6:1 to 100:1, and each oleate derivative is independently a free acid, pharmaceutically acceptable salt, ($C_1$-$C_4$)alkyl ester, monoglyceride, diglyceride, triglyceride or a combination of any two or more thereof.

14. The dietary supplement of claim 13, wherein the ratio of the C16:1n7-palmitoleate derivative to the oleate derivative is 10:1 to 20:1.

15. The dietary supplement of claim 13, wherein the ratio of the C16:1n7-palmitoleate derivative to the oleate derivative is 20:1 to 50:1.

16. The dietary supplement of claim 13, wherein the ratio of the C16:1n7-palmitoleate derivative to the oleate derivative is 50:1 to 100:1.

17. The dietary supplement of claim 1, wherein the C16:1n7-palmitoleate derivative comprises a C16:1n7-palmitoleate moiety that is obtained from fish.

18. The dietary supplement of claim 17, wherein the fish are anchovies, menhaden, pollock, herring, cod, salmon, smelt, tuna, mackerel, krill or a combination of any two or more thereof.

19. The dietary supplement of claim 17, wherein the fish comprise anchovies.

20. The dietary supplement of claim 17, wherein the fish comprise menhaden.