

TTA and palmitic acid (control), was suspended in 0.5% (w/v) carboxymethyl cellulose (CMC) and administered at a dose of 300 mg/day/kg body weight, by gastric intubation (gavage) once daily for 10 days. The rats were fasted for 2 hours before termination of the experiment. Blood and organs were collected. Total lipids were extracted from liver and plasma. The lipids were evaporated, saponified and esterified prior to separation using a Carlo Erba 2900 gas-chromatograph.

TABLE 10

Effect of Compound I (tetradecylthioacetic acid) on fatty acid composition in obese Zucker fa/fa rats.		
	Oleic acid	Monounsaturated tetradecylthioacetic acid
Fatty acid composition in liver (% of total)		
Control	9.9 ± 1.4	0.0
Compound I	14.9 ± 1.0	1.1 ± 0.2
Fatty acid composition in plasma (% of total)		
Control	18.3 ± 0.9	0.0
Compound I	22.1 ± 0.5	0.2 ± 0.1

Table 10 shows that oral administration of TTA increases the level of oleic acid in both liver and plasma. Also a delta-9-desaturated product of TTA accumulated in both plasma and liver.

What is claimed is:

1. A method for the treatment or prevention of an obese or overweight condition, comprising administering to an animal in need thereof a therapeutically effective amount of at least one fatty acid analogue of the general formula (I)



wherein

n is an integer from 1 to 12, and
m is an integer from 0 to 23, and

i is an odd number which indicates the position relative to COOR, and each X_i is independently selected from the group consisting of O, S, SO, SO₂, Se, and CH₂, and R represents hydrogen or C₁-C₄ alkyl, with the proviso that at least one of the X_i is not CH₂, or a salt, prodrug, or complex thereof.

2. The method of claim 1, wherein the animal is a human.
3. The method of claim 1, wherein the animal is an agricultural animal.

4. The method of claim 1, wherein the animal is a domestic animal.

5. The method of claim 1, wherein the animal is a fish or shellfish.

6. The method of claim 1, wherein m is greater than or equal to 13.

7. The method of claim 1, wherein X_{i=3} is selected from the group consisting of O, S, SO, SO₂, and Se, and wherein X_{i=5-25} is CH₂.

8. The method of claim 7, wherein X_{i=3} is S.

9. The method of claim 7, wherein X_{i=3} is Se.

10. The method of claim 1, wherein the fatty acid analogue is administered such that its concentration is maintained substantially continuously in the blood of the animal for the duration of the period of administration.

11. The method of claim 1, wherein the composition is in unit dosage form.

12. A method for producing weight loss or a reduction of the fat mass in a human or non-human animal comprising

administering a therapeutically effective amount of a composition comprising at least one fatty acid analogue of the general formula (I)



wherein

n is an integer from 1 to 12, and

m is an integer from 0 to 23, and

10 i is an odd number which indicates the position relative to COOR, and

each X_i is independently selected from the group consisting of O, S, SO, SO₂, Se, and CH₂, and

15 R represents hydrogen or C₁-C₄ alkyl,

with the proviso that at least one of the X_i is not CH₂, or a salt, prodrug, or complex thereof.

13. The method of claim 12, wherein the animal has developed an obese condition.

20 14. The method of claim 12, wherein the animal is low energy adapted.

15. The method of claim 12, wherein m is greater than or equal to 13.

25 16. The method of claim 12, wherein X_{i=3} is selected from the group consisting of O, S, SO, SO₂, and Se, and wherein X_{i=5-25} is CH₂.

17. The method of claim 16, wherein X_{i=3} is S.

18. The method of claim 16, wherein X_{i=3} is Se.

30 19. The method of claim 12, wherein the fatty acid analogue is administered such that its concentration is maintained substantially continuously in the blood of the animal for the duration of the period of administration.

20. The method of claim 12, wherein the composition is in unit dosage form.

35 21. The method of claim 12, wherein the animal is a human.

22. A method for the modification of the fat distribution and content of an animal, comprising administering to the animal food or a feed product comprising at least one fatty acid analogue of the general formula (I)



wherein

n is an integer from 1 to 12, and

m is an integer from 0 to 23, and

40 i is an odd number which indicates the position relative to COOR, and

each X_i is independently selected from the group consisting of O, S, SO, SO₂, Se, and CH₂, and

50 R represents hydrogen or C₁-C₄ alkyl,

with the proviso that at least one of the X_i is not CH₂, or a salt, prodrug, or complex thereof.

23. The method of claim 22, wherein the animal is a human.

24. The method of claim 22, wherein the animal is an agricultural animal.

25. The method of claim 22, wherein the animal is a domestic animal.

26. The method of claim 22, wherein the animal is a fish or shellfish.

27. The method of claim 22, wherein m is greater than or equal to 13.

65 28. The method of claim 22, wherein X_{i=3} is selected from the group consisting of O, S, SO, SO₂, and Se, and wherein X_{i=5-25} is CH₂.

29. The method of claim 28, wherein X_{i=3} is S.