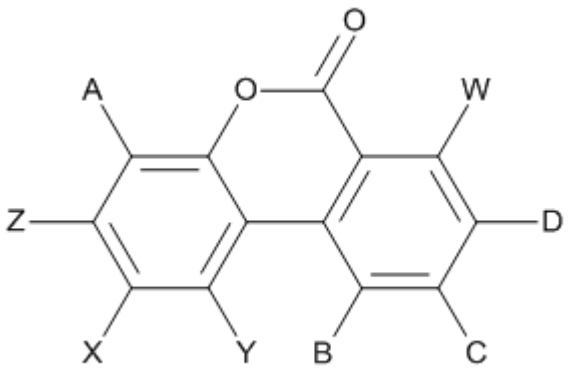
CLAIMS

1. A composition comprising:
   a) a medium-chain triglyceride; and
   b) a compound of formula (I) or a salt thereof:



(I)

wherein:

A, B, C and D are each independently selected from H and OH;

W, X and Y are each independently selected from H and OH; and

Z is selected from H and OH.

2. ~~A~~ The composition as claimed in claim 1, wherein the compound of Formula (I) is Urolithin A.

3. ~~A~~ The composition as claimed in claim 1 or claim 2 wherein the compound of Formula (I) has a D_{50} size in the range 0.5 to 50 μm and a D_{90} size in the range 5 to 100 μm.

4. ~~A~~ The composition as claimed in any preceding claim wherein the medium-chain triglyceride makes up:

(a) 20-99% w/w of the composition~~.~~;

(b)~~5. A composition as claimed in claim 4 wherein the medium-chain triglyceride makes up~~ 20-60% w/w of the composition~~.~~; or

(c)~~6. A composition as claimed in claim 4 wherein the medium-chain triglyceride makes up~~ 30-80% w/w of the composition.

5~~7~~. ~~A~~ The composition as claimed in any one of claims 1 to 4~~6~~ wherein the weight ratio between the medium-chain triglyceride component and the urolithin is in the range 0.5:1 to 3:1.

68. ~~A~~ The composition as claimed in any one of claims 1 to 57 ~~7~~ wherein the medium-chain triglyceride comprises calprylic acid and/or capric acid, for example, ~~.~~

~~9. A composition as claimed in claim 8~~ wherein the medium-chain triglyceride is derived from a source selected from coconut oil, palm oil and dairy fat.

710. ~~A~~ The composition as claimed in any one of claims 1 to 69 ~~9~~, further comprising an emulsifier, for example, ~~.~~

~~11. A composition as claimed in claim 10,~~ wherein the emulsifier is a source of phosphatidylcholine, such as ~~.~~

~~12. A composition as claimed in claim 11, wherein the source of phosphatidylcholine is~~ lecithin.

813. ~~A~~ The composition as claimed in claim 712 ~~12~~, wherein the lecithin makes up

(a) 0.5-80%w/w of the composition; or ~~.~~

~~14. A composition as claimed in claim 13, wherein the~~ (b) ~~lecithin makes up~~ 1-40%w/w of the composition.

915. ~~A~~ The composition as claimed in any one of claims 1 to 814 ~~14~~, further comprising a stabiliser, for example, ~~.~~

~~16. A composition as claimed in claim 15, wherein the stabiliser is~~ glycerol monostearate.

1017. ~~A~~ The composition as claimed in any one of claims 1 to 916 ~~16~~ wherein the composition is in the form of a solid (for example a bar), a semi-solid (for example a softgel, capsule (for example a hard capsule) or dragee), or a liquid (including emulsions), for example, ~~.~~

~~18. A composition as claimed in claim 17,~~ wherein the composition is in the form of a softgel.

1119. ~~A~~ The composition as claimed in any one of claims 1 to 918 ~~18~~ for use as a medicament, dietary supplement, functional food or medical food.

1220. ~~A~~ The composition as claimed in any one of claims 1 to 9 ~~19~~ for use as a medicament.

1321. ~~A~~ Use of the composition as claimed in any one of claims 1 to 9, ~~claim 20 for use as a medicament for use~~ in the manufacture of a medicament for the treatment and/or prophylaxis of a muscle-related pathological condition.

~~22. A method of treating a muscle-related pathological condition comprising administering the compositon as claimed in any one of claims 1 to 18 to a subject in need thereof.~~

14~~23~~. ~~A composition for~~The use as claimed in claim 13~~21, or a method as claimed in claim 22~~ wherein the muscle-related pathological condition is selected from musculoskeletal diseases or disorders; muscle wasting; myopathies; neuromuscular diseases, such as Duchenne muscular dystrophy and other dystrophies; sarcopenia, for example, acute sarcopenia; muscle atrophy and/or cachexia.

15~~24~~. ~~A composition for~~The use as claimed in claim 14~~23, or a method as claimed in claim 23,~~ wherein the muscle-related pathological condition is sarcopenia, for example acute sarcopenia.

16~~25~~. A method of enhancing muscle performance comprising administering to a subject an effective amount of a compositon as claimed in any one of claims 1 to 9~~18~~.

17~~26~~. ~~A~~ The method of enhancing muscle performance as claimed in claim 16~~25~~, wherein the subject suffers age-related decline in muscle function, age-related sarcopenia, age-related muscle wasting, physical fatigue, muscle fatigue, and/or is frail or pre-frail, for example, ~~.~~

~~27. A method of claim 26,~~ wherein the subject is frail or pre-frail.

18. The use of a composition as claimed in any one of claims 1 to 9 in a method of improving physical performance.

19. The use of a composition as claimed in Claim 18 wherein the improvement in physical performance is in a healthy individual or in the elderly.

20. The use of a composition as claimed in any one of claims 1 to 9 in a method of increasing muscle strength, increasing or maintaining muscle mass or improving muscle recovery.

21. The use of a composition as claimed in any one of claims 1 to 9 in a method of improving physical endurance.

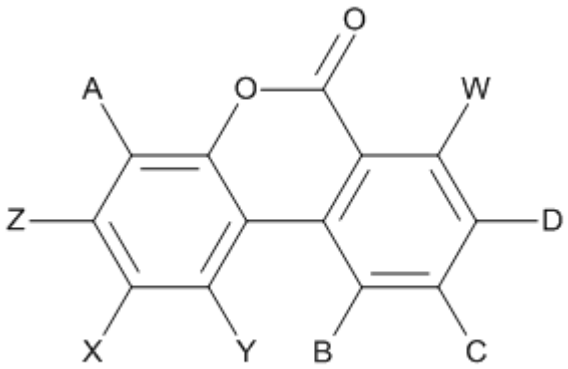
22. The use of a composition as claimed in any one of claims 1 to 9 in a method of inhibiting or retarding physical fatigue, enhancing working capacity and endurance, reducing muscle fatigue, enhancing cardiac and cardiovascular function.

23. The use of a composition as claimed in any one of claims 1 to 9 in a method of enhancing sports performance.

24. The use of a composition as claimed in any one of claims 1 to 9 for non-disease health conditions characterised by inadequate mitochondrial activity.

25. The composition as claimed in any one of claims 1 to 9 for use in the treatment of disease conditions characterised by inadequate mitochondrial activity.

~~28. A compound of formula (I) or a salt thereof:~~



~~(I)~~

~~wherein:~~

~~A, B, C and D are each independently selected from H and OH;~~

~~W, X and Y are each independently selected from H and OH; and~~

~~Z is selected from H and OH,~~

~~and wherein the compound or salt has a D_{50} size in the range 0.5 to 50 µm and a D_{90} size in the range 5 to 100 µm.~~

~~29. The compound or salt of claim 27 wherein the compound has a D_{90} size in the range 8.2 to 16.0 µm, a D_{50} size in the range 2.8 to 5.5 µm and a D_{10} size in the range 0.5 to 1.0 µm.~~