CLAIMS

1. An oral formulation comprising a plurality of agents that modulate expression of Nrf2-associated genes upon ingestion of the oral formulation by a subject, wherein the Nrf2-associated genes include at least one gene encoding intrinsic antioxidants, and at least one gene encoding cellular detoxifiers, and wherein at least one of the plurality of agents attenuates inflammation, and wherein the plurality of agents includes broccoli seed extract, red orange extract, and grape seed extract.

2. The oral formulation of claim 1, wherein the Nrf2-associated genes are selected from the group consisting of NFE2L2, GCLM, GCLC, GSR, GSTA1, GPX1, GPX4, HMOX1, NQO1, SRXN1, SQSTM1, SOD1, UGT1A6, NOS2, NOS3, and PTGS2.

3. The oral formulation of claim 2, wherein at least one of the plurality of agents substantially reverses an age-related change in expression of at least one of the Nrf2-associated genes.

4. The oral formulation of claim 1, wherein the plurality of agents combine to modulate expression of at least five Nrf2-associated genes.

5. The oral formulation of claim 1, wherein at least one of the plurality of agents upregulates a gene encoding intrinsic antioxidants.

6. The oral formulation of claim 1, wherein at least one of the plurality of agents upregulates a gene encoding cellular detoxifiers.

7. The oral formulation of claim 1, wherein at least one of the plurality of agents stimulates autophagy in a tissue of the subject.

8. The oral formulation of claim 1, wherein the plurality of agents additionally includes at least one of alpha lipoic acid, whole grape extract, olive leaf extract, olive fruit extract, coenzyme Q10, pomegranate extract, curcumin, EGCG, lutein, lycopene, zeaxanthin, resveratrol, Schizandra berry extract, tart cherry, ginseng, rosemary extract, and *Cordyceps sinensis*.

9. The oral formulation of claim 1, comprising from 20 to 30 wt% broccoli seed extract, from 25 wt% to 35 wt% red orange extract, and from 45 to 55 wt% grape seed extract.

10. The oral formulation of claim 1 present in a dosage form selected from the group consisting of: capsule, tablet, powder, beverage, wafer, confectionary, chewable, gel, paste, elixir, syrup, drops, and lozenge.

11. The oral formulation of claim 1, further comprising at least one excipient selected from the group consisting of microcrystalline cellulose, silicon dioxide, stearic acid, a food-grade gum, lecithin, and an anti-caking agent.

12. Use of a plurality of Nrf-2 modulating agents that modulate expression of Nrf2-associated genes for promoting detoxification in cells of a subject, wherein the Nrf2-associated genes include at least one gene encoding intrinsic antioxidants, and at least one gene encoding cellular detoxifiers, and wherein at least one of the plurality of agents attenuates inflammation, and wherein the plurality of agents includes broccoli seed extract, red orange extract, and grape seed extract.

13. The use of claim 12, wherein the Nrf2-associated genes are selected from the group consisting of NFE2L2, GCLM, GCLC, GSR, GSTA1, GPX1, GPX4, HMOX1, NQO1, SRXN1, SQSTM1, SOD1, UGT1A6, NOS2, NOS3, and PTGS2.

14. The use of claim 12, wherein the plurality of agents combine to modulate expression of at least five Nrf2-associated genes.

15. The use of claim 12, wherein at least one of the plurality of agents stimulates autophagy in a tissue of the subject.

16. The use of claim 12, wherein the plurality of agents additionally includes at least one of alpha lipoic acid, whole grape extract, olive leaf extract, olive fruit extract, coenzyme Q 10, pomegranate extract, ginseng, curcumin, EGCG, lutein, lycopene, zeaxanthin, resveratrol, Schizandra berry extract, tart cherry, rosemary extract, and *Cordyceps sinensis*.

17. The use of claim 12, wherein the plurality of agents comprises from 20 wt% to 30 wt% broccoli seed extract, from 25 wt% to 35 wt% red orange extract, and from 45 wt% to 55 wt% grape seed extract.

18. The use of claim 12, wherein administering provides the subject with a daily dosage of 125 mg red orange extract, 210 mg grape seed extract, and 115 mg broccoli seed extract.

19. The use of claim 12, wherein administering provides the subject with a dosage per kg of body weight of from about 0.15 mg to about 18 mg red orange extract, from about 0.3 mg to about 30 mg grape seed extract, and from about 0.15 mg to about 16.5 mg broccoli seed extract.

20. The use of claim 12, comprising administering the oral formulation to the subject at night.

21. The use of claim 12, comprising administering the oral formulation to the subject when the subject retires to bed.

22. An oral formulation for promoting cellular purification, comprising broccoli seed extract, red orange extract, and grape seed extract.

23. A system for promoting health in a subject, comprising:

a performance-enhancing formulation comprising a plurality of agents that enhance metabolic performance in a subject when administered to the subject; and

a detoxification formulation comprising a plurality of agents that promote recovery from a metabolic effect of enhanced metabolic performance in the subject and upregulate expression of Nrf2-associated genes upon ingestion of the detoxification formulation when administered to the subject, wherein the plurality of agents includes broccoli seed extract, red orange extract, and grape seed extract.

24. The system of claim 23, wherein the metabolic effect includes increased metabolic waste.

25. The system of claim 23, wherein the metabolic effect includes increased oxidative stress.

26. The system of claim 23, wherein the performance-enhancing formulation counteracts effects of aging on metabolic performance.

27. The system of claim 23, wherein the detoxification formulation modulates expression of Nrf-2 associated genes.

28. The system of claim 23, wherein the detoxification formulation additionally includes at least one of alpha lipoic acid, whole grape extract, olive leaf extract, olive fruit extract,

coenzyme Q10, pomegranate extract, curcumin, EGCG, lutein, lycopene, zeaxanthin, resveratrol, Schizandra berry extract, tart cherry, ginseng, rosemary extract, and *Cordyceps sinensis*.

29. Use of Nrf-2 modulating agents in the preparation of a detoxification formulation which upon administration to a subject promotes recovery from a metabolic effect of enhanced metabolic performance provided by a performance formulation

wherein the detoxification formulation is administered to the subject within a 24-hour period of administering the performance enhancing formulation to the subject, and wherein the detoxification formulation includes broccoli seed extract, red orange extract, and grape seed extract.

30. The use of claim 29, comprising administering the performance-enhancing formulation in the morning and administering the detoxification formulation at night.

31. The use method of claim 29, comprising administering the detoxification formulation to the subject when the subject retires to bed.

32. The use of claim 29, wherein the detoxification formulation additionally includes at least one of alpha lipoic acid, whole grape extract, olive leaf extract, olive fruit extract, coenzyme Q10, pomegranate extract, curcumin, EGCG, lutein, lycopene, zeaxanthin, resveratrol, Schizandra berry extract, tart cherry, ginseng, rosemary extract, and *Cordyceps sinensis*.

33. A kit, comprising:

an oral performance-enhancing formulation for enhancing metabolic performance in a subject when administered to the subject; and

an oral detoxification formulation for promoting recovery from a metabolic effect of enhanced metabolic performance in the subject when administered to the subject,

wherein the oral detoxification formulation comprises a plurality of Nrf2 modulators including broccoli seed extract, red orange extract, and grape seed extract.

CLAIMS

1. An oral formulation comprising a plurality of agents that modulate expression of Nrf2-associated genes upon ingestion of the oral formulation by a subject, wherein the Nrf2-associated genes include at least one gene encoding intrinsic antioxidants, and at least one gene encoding cellular detoxifiers, and wherein at least one of the plurality of agents attenuates inflammation, and wherein the plurality of agents includes broccoli seed extract, red orange extract, and grape seed extract.

2. The oral formulation of claim 1, wherein the Nrf2-associated genes are selected from the group consisting of GCLM, GCLC, GSR, GSTA1, HMOX1, NQO1, SRXN1, UGT1A6, NOS2, and PTGS2.

3. The oral formulation of claim 2, wherein at least one of the plurality of agents substantially reverses an age-related change in expression of at least one of the Nrf2-associated genes.

4. The oral formulation of claim 1, wherein the plurality of agents combine to modulate expression of at least five Nrf2-associated genes.

5. The oral formulation of claim 1, wherein at least one of the plurality of agents upregulates a gene encoding intrinsic antioxidants.

6. The oral formulation of claim 1, wherein at least one of the plurality of agents upregulates a gene encoding cellular detoxifiers.

7. The oral formulation of claim 1, wherein at least one of the plurality of agents stimulates autophagy in a tissue of the subject.

8. The oral formulation of claim 1, wherein the plurality of agents additionally includes at least one of alpha lipoic acid, whole grape extract, olive leaf extract, olive fruit extract, coenzyme Q10, pomegranate extract, curcumin, EGCG, lutein, lycopene, zeaxanthin, resveratrol, Schizandra berry extract, tart cherry, ginseng, rosemary extract, and *Cordyceps sinensis*.

9. The oral formulation of claim 1, comprising from 20 to 30 wt% broccoli seed extract, from 25 wt% to 35 wt% red orange extract, and from 45 to 55 wt% grape seed extract.

10. The oral formulation of claim 1 present in a dosage form selected from the group consisting of: capsule, tablet, powder, beverage, wafer, confectionary, chewable, gel, paste, elixir, syrup, drops, and lozenge.

11. The oral formulation of claim 1, further comprising at least one excipient selected from the group consisting of microcrystalline cellulose, silicon dioxide, stearic acid, a food-grade gum, lecithin, and an anti-caking agent.

12. Use of a plurality of Nrf-2 modulating agents that modulate expression of Nrf2-associated genes for promoting detoxification in cells of a subject, wherein the Nrf2-associated genes include at least one gene encoding intrinsic antioxidants, and at least one gene encoding cellular detoxifiers, and wherein at least one of the plurality of agents attenuates inflammation, and wherein the plurality of agents includes broccoli seed extract, red orange extract, and grape seed extract.

13. The use of claim 12, wherein the Nrf2-associated genes are selected from the group consisting of GCLM, GCLC, GSR, GSTA1, HMOX1, NQO1, SRXN1, UGT1A6, NOS2, and PTGS2.

14. The use of claim 12, wherein the plurality of agents combine to modulate expression of at least five Nrf2-associated genes.

15. The use of claim 12, wherein at least one of the plurality of agents stimulates autophagy in a tissue of the subject.

16. The use of claim 12, wherein the plurality of agents additionally includes at least one of alpha lipoic acid, whole grape extract, olive leaf extract, olive fruit extract, coenzyme Q 10, pomegranate extract, ginseng, curcumin, EGCG, lutein, lycopene, zeaxanthin, resveratrol, Schizandra berry extract, tart cherry, rosemary extract, and *Cordyceps sinensis*.

17. The use of claim 12, wherein the plurality of agents comprises from 20 wt% to 30 wt% broccoli seed extract, from 25 wt% to 35 wt% red orange extract, and from 45 wt% to 55 wt% grape seed extract.

18. The use of claim 12, wherein administering provides the subject with a daily dosage of 125 mg red orange extract, 210 mg grape seed extract, and 115 mg broccoli seed extract.

19. The use of claim 12, wherein administering provides the subject with a dosage per kg of body weight of from about 0.15 mg to about 18 mg red orange extract, from about 0.3 mg to about 30 mg grape seed extract, and from about 0.15 mg to about 16.5 mg broccoli seed extract.

20. The use of claim 12, comprising administering the oral formulation to the subject at night.

21. The use of claim 12, comprising administering the oral formulation to the subject when the subject retires to bed.

22. An oral formulation for promoting cellular purification, comprising broccoli seed extract, red orange extract, and grape seed extract.

23. A system for promoting health in a subject, comprising:

a performance-enhancing formulation comprising a plurality of agents that enhance metabolic performance in a subject when administered to the subject; and

a detoxification formulation comprising a plurality of agents that promote recovery from a metabolic effect of enhanced metabolic performance in the subject and upregulate expression of Nrf2-associated genes upon ingestion of the detoxification formulation when administered to the subject, wherein the plurality of agents includes broccoli seed extract, red orange extract, and grape seed extract.

24. The system of claim 23, wherein the metabolic effect includes increased metabolic waste.

25. The system of claim 23, wherein the metabolic effect includes increased oxidative stress.

26. The system of claim 23, wherein the performance-enhancing formulation counteracts effects of aging on metabolic performance.

27. The system of claim 23, wherein the detoxification formulation modulates expression of Nrf-2 associated genes.

28. The system of claim 23, wherein the detoxification formulation additionally includes at least one of alpha lipoic acid, whole grape extract, olive leaf extract, olive fruit extract,

coenzyme Q10, pomegranate extract, curcumin, EGCG, lutein, lycopene, zeaxanthin, resveratrol, Schizandra berry extract, tart cherry, ginseng, rosemary extract, and *Cordyceps sinensis*.

29. Use of Nrf-2 modulating agents in the preparation of a detoxification formulation which upon administration to a subject promotes recovery from a metabolic effect of enhanced metabolic performance provided by a performance formulation

wherein the detoxification formulation is administered to the subject within a 24-hour period of administering the performance enhancing formulation to the subject, and wherein the detoxification formulation includes broccoli seed extract, red orange extract, and grape seed extract.

30. The use of claim 29, comprising administering the performance-enhancing formulation in the morning and administering the detoxification formulation at night.

31. The use method of claim 29, comprising administering the detoxification formulation to the subject when the subject retires to bed.

32. The use of claim 29, wherein the detoxification formulation additionally includes at least one of alpha lipoic acid, whole grape extract, olive leaf extract, olive fruit extract, coenzyme Q10, pomegranate extract, curcumin, EGCG, lutein, lycopene, zeaxanthin, resveratrol, Schizandra berry extract, tart cherry, ginseng, rosemary extract, and *Cordyceps sinensis*.

33. A kit, comprising:

an oral performance-enhancing formulation for enhancing metabolic performance in a subject when administered to the subject; and

an oral detoxification formulation for promoting recovery from a metabolic effect of enhanced metabolic performance in the subject when administered to the subject,

wherein the oral detoxification formulation comprises a plurality of Nrf2 modulators including broccoli seed extract, red orange extract, and grape seed extract.