

WHAT IS CLAIMED IS:

1. A composition comprising a mixture of an annatto extract with tocotrienol and a natural extract, wherein the ratio of delta-tocotrienol to gamma-tocotrienol is from 1:25 to 25:1.
- 5 2. The composition of claim 1, where the standardized level of tocopherol is from less than 50% to less than 1%.
3. The composition of claim 1, where the natural extract is selected from the group
10 consisting of soy, corn, rice bran, palm, olive, wheat germ, oat bran, sunflower seed, cottonseed, cranberry seed, and litchi seed.
4. The composition of claim 2, where the tocopherol is alpha-T1.
- 15 5. The composition of claim 1, where more than 50% of the tocotrienols are delta-T3 and gamma-T3.
6. The composition of claim 1, where more than 50% of the tocotrienols are delta-T3.
- 20 7. The composition of claim 1, where the composition is tocopherol-free.
8. The composition of claim 1, where the tocotrienol is a C5 unsubstituted tocotrienol and the composition comprises more than 60% C5 unsubstituted tocotrienols, and less than 15% tocopherols.
- 25 9. The composition of claim 1 for use in activating PPARs.
10. The composition of claim 11 for use in down regulating SREBP transcription factors.
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11. The composition of claim 1 for use in decreasing blood levels of triglyceride.
12. The composition of claim 11, where the decrease in the blood level of the triglyceride has an effect selected from the group consisting of reversal of insulin resistance, metabolic syndrome, prediabetes, diabetes and diabetes-related cardiovascular disease.
13. The composition of claim 1 for use in treating a malady effecting the central nervous system.
14. The composition of claim 14 for use in treating a malady effecting the central nervous system, and the malady is selected from the group consisting of acute nerve damage, neural degenerative genetic disease, acute brain damage, brain trauma, chronic nerve damage, neural toxicity, chronic brain damage, Alzheimer's, Parkinson's, and Huntington's.
15. The composition of claim 1 for use in lowering CRP, protecting against inflammation, lowering cholesterol, decreasing cardiovascular risk index, decreasing metabolic risk index, decreasing chemotactic bioactive materials, reducing osteoporosis, increasing bone mineralization, enhancing immune system, lowering lipids and reversing insulin resistance.
16. The use of the composition of claim 1 in the manufacture of a medicament for protecting against inflammation, treating hypercholesterolemia, treating and preventing cardiovascular diseases, treating metabolic syndrome, preventing arterial thrombosis, reducing osteoporosis, enhancing immune system, treating lipidemia, reducing natriuresis and extending life.
17. The use of the composition of claim 1 in the manufacture of a medicament for reducing skin maladies selected from the group of psoriasis and eczema.
18. The use of the composition of claim 1 in the manufacture of a medicament for the treatment and prevention of diabetes and prediabetes.

19. The use of claim 18, further comprising lowering the risk of a disease selected from the group consisting of CVD, T2DM, hypertension, PCOS and fatty liver disease.

20. The use of annatto extract and a nutrient in the manufacture of a medicament for
5 treating prediabetes and diabetes, wherein said nutrient is selected from the group consisting of banaba extract (including corosolic acid), lipoic acids (all isomeric forms), chromium (all compounded forms), and B vitamins (including niacin).

WHAT IS CLAIMED IS:

1. A composition comprising an annatto extract with tocotrienol and a natural extract selected from the group consisting of soy, corn, rice bran, palm, olive, wheat germ, oat bran,
5 sunflower seed, cottonseed, cranberry seed, and litchi seed.
2. The composition of claim 1, wherein the composition has standardized level of tocopherol of $\leq 50\%$.
3. The composition of claim 2, where the tocopherol is alpha-T1.
4. The composition of claim 1, where more than 50% of the tocotrienols are delta-T3
10 and gamma-T3.
5. The composition of claim 1, where more than 50% of the tocotrienols are delta-T3.
6. The composition of claim 1, where the composition is tocopherol-free.
7. The composition of claim 1, where the tocotrienol is a C5 unsubstituted tocotrienol and the composition comprises more than 60% C5 unsubstituted tocotrienols, and less than
15 15% tocopherols.
8. The composition as defined in any one of claims 1 to 7 for use in therapy.
9. The composition of claim 8 for use in activating PPARs.
10. The composition of claim 8 for use in further regulating down SREBP transcription factors.
- 20 11. The composition of claim 8 for use in decreasing blood levels of triglyceride.
12. The composition of claim 11, wherein the decrease in the blood level of the triglyceride has an effect selected from the group consisting of reversal of insulin resistance, metabolic syndrome, prediabetes, diabetes and diabetes-related cardiovascular disease.
13. The composition of claim 8 for use in treating a disease effecting the central nervous
25 system.

14. The composition of claim 13, where the disease is selected from the group consisting of acute nerve damage, neural degenerative genetic disease, acute brain damage, brain trauma, chronic nerve damage, neural toxicity, chronic brain damage, Alzheimer's, Parkinson's, and Huntington's.
- 5 15. The composition as defined in claim 8 for use in lowering CRP, protecting against inflammation, lowering cholesterol, decreasing cardiovascular risk index, decreasing metabolic risk index, decreasing chemotactic bioactive materials, improving arterial vasculature, reducing osteoporosis, increasing bone mineralization, enhancing immune system, lowering lipids, reversing insulin resistance, increasing natriuresis, and extending
10 life.
16. Use of a composition as defined in claim 1 for preparing a medicament for topical application for the treatment of skin diseases.
17. Use of a composition as defined in claim 1 containing tocotrienol for preparing a medicament for reversing insulin resistance and potentiating insulin.
- 15 18. The use of claim 17, wherein the medicament is further for lowering the risk of a disease selected from the group consisting of CVD, T2DM, hypertension, PCOS and fatty liver disease.
19. Use of a composition as defined in claim 1 containing tocotrienol and geranyl geraniol for preparing a medicament for reducing cancer.
- 20 20. A composition for use in reducing cardio vascular diseases and diabetes, the composition comprising annatto extract with tocotrienol and a nutrient selected from the group consisting of phytosterols, oryzanols, policosanols, pentathine, red yeast rice (Monascus), oat bran, garlic, gugul lipids, chitosan, soy protein, oligo- and poly-peptides or hydrolysates of soy protein, CoQ10, carnitine, magnesium, calcium, D-tyroxine, fibers of the
25 insoluble and soluble type, including beta-glucan, omega-3s, including DHAs and EPAs and alpha linoleic acid, and lecithin.

21. The composition of claim 20 for use in treating prediabetes and diabetes simultaneously (glucose-fatty acid cycle), the composition comprising annatto extract with tocotrienol and a nutrient selected from the group consisting of banaba extract including corosolic acid, lipoic acids, all isomeric forms of lipoid acid, chromium including all
5 compounded forms thereof, and B vitamins including niacin.