COMPOSITION OF COLLAGEN PEPTIDES AND ASTAXANTHIN

TECHNICAL FIELD

This invention relates generally to a composition of collagen peptides and astaxanthin.

Background

Collagen is an important part of the human skin. Aging usually leads to a reduction in the body's immune system's ability to resist ultraviolet radiation and air pollution and to reduce free radical oxidation, thereby leading to rapid loss of collagen which consequently leads to skin aging. Astaxanthin is by far the strongest antioxidant that nature has to offer to inhibit the body's absorption of free radicals. Recent studies have shown that astaxanthin has antioxidant, anti-tumor, immunity enhancing and many other important physiology and biology benefits including a biological antioxidant capacity of 6000 times stronger than vitamin C, 100-500 times stronger than vitamin E and more than 10 times stronger than carotene. It is known that collagen contributes towards reduction of wrinkles and cellulite, increase in skin moisture and elasticity and the regeneration of the dermal collagen matrix. Likewise, astaxanthin independently contributes towards improving rough skin, inhibiting melanin production, reducing atopic dermatitis and to provide cellular protection. It is desirous to combine and synergise the benefits of both collagen and astaxanthin through the provision of a composition comprising both collagen and astaxanthin. Therefore, there exists a need for a composition with specific effective ratio between and/or quantities of collagen and astaxanthin for effecting the aforesaid benefits.

Summary

In accordance with an aspect of the invention, there is disclosed a composition comprising collagen peptides and astaxanthin, wherein the dry mass weight ratio of collagen peptides to astaxanthin lies in the range of approximately 1.5:1 to approximately 3000:1. It is an object that quantity of asthaxanthin lies in the range of 2mg to 40mg and that quantity of collagen peptides lies in the range of 1.5g to 10g. It is a further object that the dry mass weight ratio of collagen peptides to astaxanthin is substantially 625:1 with 5g of collagen peptides and 8mg of astaxanthin by dry mass.

Detailed Description

An exemplary embodiment of the present invention, a composition, is described hereinafter. The composition preferably comprises collagen peptides and astaxanthin.

There is an agreement that biological effects promoted by food-derived collagen peptides are related to the ingestion of collagen in its hydrolyzed form. Collagen peptides are a bioavailable food supplement without any side effects that are derived from native collagen by heat denaturation and further enzymatic hydrolysis. Specific and complex multistep hydrolysis gives rise to biologically active collagen peptides, which have been proven to stimulate dermal metabolism and have positive effects on skin properties. Although it is generally believed that collagen-derived products are hydrolyzed into amino acids in the gastrointestinal tract before being absorbed into the blood circulation system, there is considerable evidence showing that peptides can be absorbed partially intact. Several human and animal bioavailability studies with orally administered collagen peptides have shown that food-derived collagen peptides are absorbed mostly as free amino acids like other protein sources, but also as collagen-derived peptides. Therefore, orally ingested collagen peptides are able to cross the intestinal barrier and enter the blood circulation system, from where they are transported to the skin. Inside the target connective tissue, collagen peptides affect the metabolic processes of the skin.

Astaxanthin is a keto-carotenoid pigment naturally accumulated via the diet in marine animals such as salmon, shrimp, red seabream and lobster and in birds such as flamingoes. Astaxanthin also occurs in certain microalgae such as Haemalococcus pluvialis and in yeasts such as Phafiia species. It can be chemically synthesized and obtained in naturally occurring stereoisomer form. Astaxanthin, although related to other carotenoids such as beta-carotene, Zeaxanthin and lutein, is a more powerful antioxidant. Astaxanthin is particularly potent in quenching singlet oxygen and has over five hundred times the ability to quench singlet oxygen as alpha-tocopherol. This antioxidant activity of astaxanthin is thought to be responsible for the wide range of health-promoting properties it exhibits, including skin and eye protection from damage by UV-light, anti-inflammatory activity, modulation or promotion of the immune response, reduction in aging processes and benefits to heart, liver, joints and prostate.

In order to provide a composition for the treatment of skin rejuvenation with an improved efficacy, it is proposed that the composition comprises the dry mass weight ratio of collagen peptides to astaxanthin be in the range of approximately 1.5:1 to approximately 3000:1. When working with the dry mass weight ratio of collagen peptides to astaxanthin, it is preferred that quantity of asthaxanthin lies in the range of 2mg to 40mg while quantity of collagen peptides lies in the range of 1.5g to 10g.

The collagen peptides are bioactive collagen peptides and are in a hydrolysed form obtained by enzymatic hydrolysis of type I and/or type III collagen. The astaxanthin is derived from at least one of haemalococcuspluvialis algae, pfaffia, krill, or by synthetic routes, in the free diol, monoester or diester form. When combined, the composition is for treatment of skin regeneration with improved efficacy.

In a preferred implementation of the ranges of ratio and quantities as afore-proposed, it is further proposed that the dry mass weight ratio of collagen peptides to astaxanthin is substantially 625:1 with the composition comprising 5g of collagen peptides and 8mg of astaxanthin by dry mass. Further, it is preferred that the collagen peptide has an average molecular weight of approximately 0.3 kDa to approximately 30 kDa.

The composition may be prescribed and consumed as a medication or food supplement. Preferably, the medication or food supplement comprises the composition which comprises the collagen peptides and astaxanthin with the dry mass weight ratio of bioactive collagen peptides to astaxanthin being in the range of approximately 625:1 to approximately 5000: 1.
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The medication or food supplement can be in the form of a solution, a syrup, a powder or a granulate. Alternatively, the medication or food supplement can be in the form of tablets, film tablets, capsules, lozenges, sugar-coated pills or sugar-cored pills. Nonetheless, it is preferred that a dose of the medication or the food supplement comprises approximately 5g of collagen peptides and 8mg of astaxanthin by dry mass.

Aspects of particular embodiments of the present disclosure address at least one aspect, problem, limitation, and/or disadvantage associated with existing compositions. While features, aspects, and/or advantages associated with certain embodiments have been described in the disclosure, other embodiments may also exhibit such features, aspects, and/or advantages, and not all embodiments need necessarily exhibit such features, aspects, and/or advantages to fall within the scope of the disclosure. It will be appreciated by a person of ordinary skill in the art that several of the above-disclosed structures, components, or alternatives thereof, can be desirably combined into alternative structures, components, and/or applications. In addition, various modifications, alterations, and/or improvements may be made to various embodiments that are disclosed by a person of ordinary skill in the art within the scope of the present disclosure, which is limited only by the following claims.

Claims

1. A composition comprising collagen peptides and astaxanthin, wherein the dry mass weight ratio of collagen peptides to astaxanthin lies in the range of approximately 1.5:1 to approximately 3000:1.

2. The composition as in claim 1, wherein quantity of asthaxanthin lies in the range of 2mg to 40mg.

3. The composition as in claim 1, wherein the quantity of collagen peptides lies in the range of 1.5g to 10g.

4. The composition as in claim 1, wherein the dry mass weight ratio of collagen peptides to astaxanthin is substantially 625:1.

5. The composition as in claim 4, comprising 5g of collagen peptides and 8mg of astaxanthin by dry mass.

6. The composition as in claim 1, the collagen peptides being bioactive collagen peptides.

7. The composition as in claim 1, the collagen peptide being in a hydrolysed form.

8. The composition as in claim 1, the astaxanthin is derived from at least one of haemalococcuspluvialis algae, pfaffia, krill, or by synthetic routes, in the free diol, monoester or diester form.

9. The composition as in claim 1, the composition being for the treatment of skin regeneration with improved efficacy.

10. The composition according to claim 1, wherein the collagen peptide is obtained by enzymatic hydrolysis of type I and/or type III collagen.

11. The composition according to claim 1, wherein the collagen peptide has an average molecular weight of approximately 0.3 kDa to approximately 30 kDa.

12. A medication or food supplement comprising the composition comprising collagen peptides and astaxanthin, wherein the dry mass weight ratio of bioactive collagen peptides to astaxanthin lies in the range of approximately 625:1 to approximately 5000: 1.

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13. A medication or food supplement according to claim 12 in the form of a solution, a syrup, a powder or a granulate.

14. A medication or food supplement according to claim 12 in the form of tablets, film tablets, capsules, lozenges, sugar-coated pills or sugar-cored pills

15. A medication or food supplement according to claim 12, wherein a dose of the medication or the food supplement comprises approximately 5g of collagen peptides and 8mg of astaxanthin by dry mass.