CLAIMS

1. A composition comprising at least 50 mg/g of one or several omega-3 type fatty acid(s), at least 10 mg/g of one or several xanthophyll(s), at least 1 mg/g of one or several sterol(s) and at least 2 µg/g of one or several phycoprostane(s).

2. The composition according to claim 1, characterized in that it comprises 50 to 250 mg/g of one or several omega-3 type fatty acid(s), 10 to 50 mg/g of one or several xanthophyll(s), 1 to 20 mg/g of one or several sterol(s), 2 to 100 µg/g of one or several phycoprostane(s).

3. The composition according to claim 1 or 2, characterized in that it comprises 50 to 200 mg/g of one or several omega-3 type fatty acid(s), 10 to 30 mg/g of one or several xanthophyll(s), 1 to 8 mg/g of one or several sterol(s) and 2 to 50 µg/g of one or several phycoprostane(s).

4. The composition according to any one of claims 1 to 3, characterized in that it comprises 50 to 170 mg/g of one or several omega-3 type fatty acid(s), 10 to 25 mg/g of one or several xanthophyll(s), 1 to 6 mg/g of one or several sterol(s) and 2 to 40 µg/g of one or several phycoprostane(s).

5. A food supplement comprising a composition according to any one of claims 1 to 4, and at least one oil selected from medium-chain triglycerides (MCT).

6. The food supplement according to claim 5, characterized in that the medium-chain triglycerides (MCT) are selected from coconut palm oil and palm oil.

7. The composition according to any one of claims 1 to 4 or the food supplement according to claim 5 or 6, characterized in that the one or at least one of the omega-3 type fatty acids is selected from stearidonic acid (SDA), eicosapentaenoic acid (EPA), docosahexaenoic acid (DHA) and mixtures thereof.

8. The composition according to any one of claims 1 to 4 and 7 or the food supplement according to any one of claims 5 to 7, characterized in that the one or at least one of the xanthophylls is fucoxanthin.

9. The composition according to any one of claims 1 to 4, 7 and 8 or the food supplement according to any one of claims 5 to 8, characterized in that the one or at least one of the sterols is selected from phytosterols.

10. The composition according to any one of claims 1 to 4 and 7 to 9 or the food supplement according to any one of claims 5 to 9, characterized in that the one or at least one of the phycoprostanes is selected from phytoprostanes, isoprostanes and neuroprostanes.

11. The composition according to any one of claims 1 to 4 and 7 to 10, or the food supplement according to any one of claims 5 to 10, characterized in that it

further comprises at least one additive selected from preservative agents, colorants, flavors, disintegration agents, lubricant agents, coating or encapsulation agents.

12. The composition according to any one of claims 1 to 4 and 7 to 11, or the food supplement according to any one of claims 5 to 11, characterized in that it is in the form of gel capsules, capsules, tablets, pastilles or loose powder.

13. The composition according to any one of claims 1 to 4 and 7 to 12, or the food supplement according to any one of claims 5 to 12, characterized in that it is packaged in doses having a unit weight comprised between 10 mg and 1 g.

14. A use of a microalga selected from any one of the taxons *Pinguiophyceae*, *Chrysophyceae*, *Bacillariophyceae*, *Mamiellophyceae*, *Prymnesiophyceae*, *Haptophyceae, Coccolithophyceae, Isochrysidaceae* and *Phaeodactylaceae,* to prepare a composition according to any one of claims 1 to 4 and 7 to 13, or a food supplement according to any one of claims 5 to 13.

15. The use according to claim 14, characterized in that said microalga is *Tisochrysis lutea* or *Phaeodactylum tricornutum.*

16. Use of a food supplement according to any of claims 5 to 13, in the manufacture of a medicament for preventing the apparition of age-related cognitive disorders, defined as a non-pathological decrease of the cognitive functions, or cognitive disorders in children or young adults having been subjected to a prenatal stress inducing non-pathological disorders, such as hyperactivity, attention and memory deficit, language retardation and anxious behavior.

17. The use according to claim 16, for preventing the apparition of age-related cognitive disorders, defined as a non-pathological decrease of the cognitive functions, characterized in that the daily intake is comprised between 2 to 5 mg of food supplement/kg of body weight.

18. The use according to claim 16, for preventing the apparition of cognitive disorders in children or young adults having been subjected to a prenatal stress inducing non-pathological disorders, such as hyperactivity, attention and memory deficit, language retardation and anxious behavior, characterized in that the daily intake is comprised between 0.05 to 0.1 mg of food supplement /kg of body weight.

19. The food supplement according to any of claims 5 to 13 for use as a therapy.