CLAIMS

1. Composition for promoting mitochondrial biogenesis and improving mitochondrial function in a subject, the composition comprising an active agent, said active agent containing the amino acids leucine, isoleucine, valine, threonine, lysine and citric acid, succinic acid, malic acid,

wherein the citric acid:malic acid:succinic acid weight ratio is comprised between 10:1:1 and 2:1.5:1.5, preferably between 7:1:1 and 1.5:1:1, more preferably between 5:1:1 and 3:1:1.

2. Composition according to claim 1, wherein the weight ratio between the sum of citric acid, malic acid, succinic acid and the sum of the branched chain amino acids leucine, isoleucine, valine plus lysine and threonine is comprised between 0.05 and 0.3, preferably between 0.1 and 0.25.

3. Composition according to any one of the preceding claims, wherein the weight ratio between the overall amount of citric acid, malic acid, succinic acid and the overall amount of the branched chain amino acids leucine, isoleucine, valine is comprised between 0.1 and 0.4, preferably between 0.15 and 0.35.

4. Composition according to any one of the preceding claims, wherein the weight ratio between citric acid and the sum of malic acid and succinic acid is comprised between 1.0 and 4.0, preferably between 1.5 and 2.5.

5. Composition according to any one of the preceding claims, wherein said active agent further

comprises at least one amino acid selected in the group consisting of histidine, phenylalanine, methionine, tryptophan, tyrosine, cysteine.

6. Composition according to any one of the preceding claims, wherein said active agent further comprises histidine, phenylalanine, methionine, tryptophan, cysteine and optionally tyrosine.

7. Composition according to any one of the preceding claims, wherein the ratio between the overall molar amount of citric acid, malic acid, succinic acid and the overall molar amount of methionine, phenylalanine, histidine and tryptophan is higher than 1.35.

8. Composition according to any one of the preceding claims, wherein the ratio between the overall molar amount of the three acids citric acid, succinic acid, malic acid and the overall molar amount of lysine and threonine is comprised between 0.10 and 0.70, preferably between 0.15 and 0.55.

9. Composition according to any one of the preceding claims, wherein the weight or molar amount of citric acid is higher than the overall weight or molar amount of both malic acid and succinic acid.

10. Composition according to any one of the preceding claims, wherein the weight ratio between leucine and citric acid is comprised between 5 and 1, preferably between 2.50 and 3.50.

11. Composition according to any one of the preceding claims, wherein said active agent is free of

arginine.

12. Composition according to any one of the preceding claims, wherein the composition further comprises one or more vitamins, preferably selected in the group of vitamins B, more preferably vitamin B1 and/or vitamin B6.

13. Composition according to any one of claims 1 to 12, for use in medicine.

14. Composition according to any one of claims 1 to 13, for use in the treatment and/or prevention of a mitochondrial dysfunction-related disease selected from sarcopenia and heart failure.