CLAIMS

1. A composition comprising:
    a. a preparation of the fruit of *Punica granatum,* and
    b. one or more human milk oligosaccharides (HMOs).

2. ~~A~~ The composition according to claim 1 wherein the HMO is selected from neutral HMOs or acidic HMOs.

3. ~~A~~ The composition according to ~~any one of~~ claim 1 ~~2~~ or claim 2 wherein the HMO is one or more fucosylated HMOs or one or more non-fucosylated HMOs, or a mixture of fucosylated and non-fucosylated HMOs.

4. ~~A~~ The composition according to any one of claims 1-3 wherein the one or more HMOs is selected from 2'-FL, 3-FL, DFL, LNT, LNnT, 3'-SL, 6'-SL, LNFP-1 or a mixture thereof.

5. ~~A~~ The composition according to any one of claims 1-4 wherein the one or more HMOs comprises, consists of or essentially consists of:
    a. 2'-FL and at least one of LNnT and LNT;
    b. at least one of 2'-FL and DFL and at least one of LNnT and LNT;
    c. 2'FL and 6'-SL;
    d. DFL and 6'-SL;
    e. 2'-FL, DFL and 6'-SL;
    f. 2'-FL, 6'-SL and at least one of LNnT and LNT; or
    g. 2'-FL, DFL, 6'-SL and at least one of LNnT and LNT.

6. ~~A~~ The composition according to any one of claims 1-5 which contains a preparation of the fruit of *Punica granatum* and one or more human milk oligosaccharides (HMOs) in a ratio (w/w) of from 5:1 to 1:10.

7. ~~A~~ The composition according to any one of claims 1-6 formulated as a single preparation.

8. ~~A~~ The composition according to any one of claims 1-6 formulated as a kit comprising

a. a preparation of the fruit of *Punica granatum,* and

b. one or more human milk oligosaccharides (HMOs),

as separate components, together with instructions for use.

9. Use of the~~A~~ composition according to any one of claims 1-8 in the manufacture of a medicament for ~~use in~~ the treatment of a human subject identified as being a urolithin non-producer, wherein ~~said use comprises an oral administration of~~ said composition is to be orally administered in a daily dose containing between 500 – 10000 mg HMOs/day and 500 – 5000 mg of a preparation of the fruit of *Punica granatum*/day.

10. The use ~~A composition~~ according to claim 9 ~~for use in the treatment of a human subject identified as being a urolithin non-producer~~, wherein ~~said use comprises an oral administration of~~ said composition is to be orally administered in a daily dose~~,~~ containing ~~a dosage of~~ at least 75 mg punicalagins/day, such as between 75 mg/day and 1500 mg/day, such as between 100 mg/day and 1000 mg/day, preferably at least 300 mg/day.

11. The use~~A composition~~ according to ~~any one of~~ claim 9 or claim 10 ~~for use in the treatment of a human subject identified as being a urolithin non-producer~~, wherein ~~said use comprises an oral administration of~~ said composition is to be orally administered in a daily dose~~,~~ containing between 500 mg and 10000 mg HMOs/day, such as at least 500 mg HMOs/day, such as at least 750 mg HMOs/day, such as at least 1000 mg HMOs/day, such as at least 2000 mg/day such as at least 5000 mg HMOs/day.

12. ~~A method for increasing the production of urolithins in a human subject, in particular final urolithins, said method comprising administering a~~Use of the composition according to any one of claims 1-8 in the manufacture of a medicament for increasing the production of urolithins in a human subject, in particular final urolithins, wherein the composition according to any one of claims 1-8 is to be administered to the human subject.

13. ~~A method for increasing the production of urolithins in a human subject~~The use according to claim 12, wherein the administered composition according to any one of claims 1-8 contains between 500 mg and 10000 mg HMOs/day, such as at least 500 mg HMOs/day, such as at least 750 mg HMOs/day,

such as at least 1000 mg HMOs/day, such as at least 2000 mg/day such as at least 5000 mg HMOs/day.

14. ~~A method for increasing the production of urolithins in a human subject~~ The use according to ~~any one of~~ claim 12 or claim 13, wherein the administered composition according to any one of claims 1-8 contains at least 75 mg punicalagins/day, such as between 75 mg/day and 1500 mg/day, such as between 100 mg/day and 1000 mg/day, preferably at least 300 mg/day.

15. ~~A method for increasing the production of urolithins in a human subject~~ The use according to any one of claims 12-14, wherein said urolithins comprise one or more of urolithin A, urolithin B and isourolithin A.

16. The composition according to any one of claims 1-8 for use in therapy.