

CLAIMS

1. A composition comprising:
 - a. a preparation of the fruit of *Punica granatum*, and
 - 5 b. one or more human milk oligosaccharides (HMOs).
2. A composition according to claim 1 wherein the HMO is selected from neutral HMOs or acidic HMOs.
3. A composition according to any one of claim 1-2 wherein the HMO is one or more fucosylated HMOs
10 or one or more non-fucosylated HMOs, or a mixture of fucosylated and non-fucosylated HMOs.
4. A composition according to any one of claim 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.
- 15 5. A composition according to any one of claim 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;
 - 20 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.
- 25 6. A composition according to any one of claim 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 composition according to any one of claim 1-6 formulated as a single preparation.
- 30 8. A composition according to any one of claim 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. A composition according to any one of claim 1-8 for use in the treatment of a human subject identified as being a non-producer, wherein said use comprises an oral administration of said composition 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.

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10. A composition according to claim 9 for use in the treatment of a human subject identified as being a non-producer, wherein said use comprises an oral administration of said composition, 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.

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11. A composition according to any one of claim 9 or 10 for use in the treatment of a human subject identified as being a non-producer, wherein said use comprises an oral administration of said composition, 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.

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12. A method for increasing the production of urolithins in a human subject, in particular final urolithins, said method comprising administering a composition according to any one of claims 1-8.

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13. A method for increasing the production of urolithins in a human subject 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.

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14. A method for increasing the production of urolithins in a human subject according to any one of claim 12 or 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.

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