

CLAIMS

1. A spray-dried powder containing a mixture of structurally distinct human milk oligosaccharides.
- 5 2. The spray-dried powder according to claim 1, wherein the structurally distinct HMOs of the mixture are selected from the group consisting of 2'-FL, 3-FL, LNT, LMhT, LNFPI, 3'-SL, 6'-SL, LST-a, LST-b, LST-c and DSLNT.
3. The spray-dried powder according to claim 1 or 2, wherein said spray-dried powder further contains at least one monosaccharide, said at least one
10 monosaccharide being preferably selected from the group consisting of L-fucose and *N*-acetylneuraminic acid.
4. The spray-dried powder according to any one of claims 1 to 3, wherein the spray-dried powder contains at least 80 %-wt., at least 85 %-wt., at least 90 %-wt., at least 93 %-wt., at least 95 %-wt. or at least 98 %-wt. human milk
15 oligosaccharides.
5. The spray-dried powder according to any one of claims 1 to 4, wherein at least one HMO of the mixture, preferably all HMOs of the mixture, optionally the at least one monosaccharide, are present in amorphous form.
6. The spray-dried powder according to any one of claims 3 to 5, wherein the at
20 least one monosaccharide, preferably all monosaccharides are present in amorphous form.
7. The spray-dried powder according to any one of claims 1 to 6, wherein the spray-dried powder contains ≤ 15 %-wt. of water, preferably ≤ 10 %-wt. of water, more preferably ≤ 7 %-wt. of water, most preferably ≤ 5 %-wt. of water.

8. A process for the manufacture of a spray-dried powder as defined in any one of claims 1 to 7, the process comprises the steps of:
- a) purifying at least one of the structurally distinct HMOs from a fermentation broth;
 - 5 b) providing an aqueous solution containing the at least one HMO of step a);
and
 - c) subjecting the solution of step b) to spray-drying.
9. The process according to claim 8, wherein the aqueous solution of step b) contains at least five, preferably seven structurally distinct HMOs, said
- 10 structurally distinct HMOs being preferably selected from the group consisting of 2'-FL, 3-FL, LNT, LNnT, LNFPI, 3'-SL, 6'-SL, LST-a, LST-b, LST-c and DSLNT.
10. The process according to claim 8 or 9, wherein the aqueous solution of step b) further contains at least one monosaccharide, said at least one
- 15 monosaccharide being preferably selected from the group consisting of L-fucose and N-acetylneuraminic acid.
11. The process according to any one of claims 8 to 10, wherein the step of purifying the at least one HMO and/or the at least one monosaccharide from a fermentation broth (step a)) includes one or more of the steps of
- 20 i) removing the microbial cells from the fermentation broth to obtain a process stream;
 - ii) subjecting the process stream to at least one ultrafiltration;
 - iii) treating the process stream at least one time with a cation exchange resin and/or at least one time with an anion exchange resin;
 - 25 iv) subjecting the process stream to at least one nanofiltration and/or diafiltration;
 - v) subjecting the process stream to at least one electrodialysis;
 - vi) treating the process stream at least one time with activated charcoal;
and/or

- vii) subjecting the process stream at least one time to a crystallization and/or precipitation step.
12. The process according to any one of claims 8 to 11, wherein the aqueous solution contains the at least one HMO, the mixture of structurally distinct HMOs, and/or the at least one monosaccharide, in an amount totaling a
5 saccharide amount of at least 20 % (w/v), 30 % (w/v), 35 % (w/v), and up to 45 % (w/v), 50 % (w/v), 60 % (w/v).
13. The process according to any one of claims 8 to 12, wherein the aqueous solution containing the at least one HMO, and optionally the at least one
10 monosaccharide, is spray-dried at a nozzle temperature of at least 110 °C, preferably at least 120 °C, more preferably at least 125 °C, and less than 150 °C, preferably less than 140 °C and more preferably less than 135 °C.
14. The process according to any one of claims 8 to 13, wherein the aqueous solution containing the at least one HMO, and optionally the at least one
15 monosaccharide, is spray-dried at an outlet temperature of at least 60 °C, preferably at least 65 °C, and less than 80 °C, preferably less than 70 °C.
15. Use of the spray-dried powder according to any one of claims 1 to 7 for the manufacture of a nutritional composition, preferably of an infant formula.
16. A nutritional composition containing the spray-dried powder according to any
20 one of claims 1 to 7.
17. The nutritional composition according to claim 16, wherein the nutritional composition further contains at least one probiotic microorganism.