CLAIMS

1. A spray-dried powder containing at least 80 %-wt. of at least one lacto-*N*-fucopentaose which has been produced by microbial fermentation, wherein the spray-dried powder is free of nucleic acid molecules derived from genetically-engineered microorganisms.

2. The spray-dried powder according to claim 1, wherein the spray-dried powder contains at least 85 %-wt., at least 90 %-wt., at least 93 %-wt., at least 95 %-wt. or at least 98 %-wt. lacto-*N*-fucopentaose.

3. The spray-dried powder according to claim 1 or 2, wherein the lacto-*N*-fucopentaose is present in amorphous form.

4. The spray-dried powder according to any one of claims 1 to 3, 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.

5. The spray-dried powder according to any one of claims 1 to 4, wherein the spray-dried powder is free of genetically-engineered microorganisms.

6. A process for the manufacture of a spray-dried powder as defined in any one of claims 1 to 5, the process comprises the steps of:
   a) purifying the lacto-*N*-fucopentaose from a process stream;
   b) providing an aqueous solution containing the lacto-*N*-fucopentaose of step a); and
   c) subjecting the solution of step b) to spray-drying.

7. The process according to claim 6, wherein the step of purifying the lacto-*N*-fucopentaose from a process stream (step a)) includes one or more of the steps of

i) removing the microbial cells from the fermentation broth and/or lysing the cells 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;

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.

8. The process according to claim 6 or 7, wherein the aqueous solution contains the lacto-*N*-fucopentaose in an 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).

9. The process according to any one of claims 6 to 8, wherein the aqueous solution containing the lacto-*N*-fucopentaose 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.

10. The process according to any one of claims 6 to 9, wherein the aqueous solution containing lacto-*N*-fucopentaose 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.

11. Use of the spray-dried powder according to any one of claims 1 to 5 for the manufacture of a nutritional composition, preferably an infant formula.

12. A nutritional composition containing the spray-dried powder according to any one of claims 1 to 5.

13. The nutritional composition according to claim 12, further containing at least one additional HMO, wherein said at least one additional HMO is a neutral HMO or a sialylated HMO.

14. The nutritional composition according to claim 12 or 13, wherein the at least one neutral HMO is selected from the group consisting of 2'-fucosyllactose, 3-fucosyllactose, lacto-*N*-tetraose, lacto-*N*-*neo*tetraose, lacto-*N*-fucopentaose I, lacto-*N*-fucopentaose II, lacto-*N*-fucopentaose III and lacto-*N*-fucopentaose V.

15. The nutritional composition according to any one of claims 12 to 14, wherein the at least one sialylated HMO is selected from the group consisting of 3'-sialyllactose, 6'-sialyllactose, sialyllacto-*N*-tetraose (LST)-a, LST-b, LST-c and disialyllacto-N-tetraose.

16. The nutritional composition according to any one of claims 12 to 15, wherein the nutritional composition contains at least one probiotic microorganism.