

CLAIMS

1. A method for drying human milk oligosaccharides and/or for obtaining human milk oligosaccharides in the form of a powder, the method comprises the steps of:
- 5 of:
- a) providing an aqueous solution containing a purified human milk oligosaccharide; and
- b) applying the aqueous solution to a roller dryer or a drum dryer.
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2. The method according to claim 1, wherein the aqueous solution contains the purified human milk oligosaccharide in a concentration of ≥ 1 g/L, ≥ 10 g/L, ≥ 20 g/L, ≥ 25 g/L, ≥ 30 g/L, ≥ 40 g/L, ≥ 60 g/L, ≥ 100 g/L, ≥ 200 g/L, ≥ 300 g/L or even ≥ 400 g/L.
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3. The method according to any one of the preceding claims, wherein the aqueous solution contains the human milk oligosaccharide in a total purity of at least 50 %, at least 65 %, at least 80 %, at least 90 %, at least 95 % or at least 98 % with respect to the weight of dry matter/solutes within such aqueous solution.
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4. The method according to any one of the preceding claims, wherein the roller dryer of the drum dryer is selected from a single drum dryer or a double drum dryer.
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5. The method according to any one of the preceding claims, wherein the roller dryer or the drum dryer is a vacuum roller dryer or vacuum drum dryer.
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6. The method according to any one of the preceding claims, wherein the aqueous solution is dried at a drum cylinder wall temperature of at least 25 °C, preferably at least 30 °C, preferably at least 35 °C, preferably at least 40 °C, preferably at least 45 °C, preferably at least 50 °C, preferably at least 55 °C, preferably at least 60 °C, preferably at least 65 °C, preferably at least 70 °C, more preferably at least 75 °C, and less than 200 °C, less than 195 °C, less than 190 °C, less than 185 °C, less than 180 °C, preferably less than 175 °C,
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less than 170 °C, less than 165 °C, less than 160 °C, less than 155 °C, and more preferably less than 150 °C.

- 5 7. The method according to any one of the preceding claims, wherein the aqueous solution is dried at a shell temperature of at least 25 °C, preferably at least 30 °C, preferably at least 35 °C, preferably at least 40 °C, preferably at least 45 °C, preferably at least 50 °C, and less than 150 °C, preferably less than 145 °C, preferably less than 140 °C, preferably less than 135 °C, preferably less than 130 °C, and more preferably less than 145 °C. In a particularly preferred embodiment, the aqueous solution containing the aimed HMO is vacuum roller dried or vacuum drum dried at a shell temperature of about 80 °C to about 90 °C.
- 10 8. The method according to any one of the preceding claims, wherein the aqueous solution is dried at a rotation speed of the drum cylinders of at least 0.1 rpm, preferably at least 1.0 rpm and less than 30 rpm, more preferably less than 20 rpm.
- 15 9. The method according to any one of the preceding claims, wherein the aqueous solution is dried at a gap between the drum cylinders of at least 0.02 mm, preferably at least 0.2 mm, and less than 20 mm, more preferably less than 10 mm.
- 20 10. The method according to any one of the preceding claims, wherein the aqueous solution is dried at a pressure of at least 0.55 mbar, preferably at least at 5.5 mbar, and less than 1013 mbar, more preferably less than 550 mbar.
- 25 11. The method according to any one of the preceding claims, wherein the aqueous solution is dried from a solution having an ethanol content of at least 0.1% (v/v), preferably at least of 1.0% (v/v), and less than 100% (v/v), more preferably less than 50% (v/v).
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12. The method according to claim 11, wherein the aqueous solution is dried from a solution with a relative ethanol content determined of at least 0.01 %, and less than 10 %.
- 5 13. The method according to any one of the preceding claims, wherein the human milk oligosaccharide is selected from the group consisting of *N*-acetyl-lactosamines, Lacto-*N*-biose I, sialylated oligosaccharides, and fucosylated oligosaccharides.
- 10 14. The method according to claim 13, wherein the *N*-acetyl-lactosamine or Lacto-*N*-biose I are selected from one or more of the group consisting of lacto-*N*-tetraose (LNT), lacto-*N*-neotetraose (LNnT) and lacto-*N*-fucopentaose I (LNPF1).
- 15 15. The method according to claim 13, wherein the sialylated oligosaccharide is selected from one or more of the group consisting of 3'-sialyllactose (3'-SL), 6'-sialyllactose (6'-SL), sialyllacto-*N*-tetraose a (LST-a), sialyllacto-*N*-tetraose b (LST-b), sialyllacto-*N*-tetraose c (LST-c) and disialyllacto-*N*-tetraose (DSLNT).
- 20 16. The method according to claim 13, wherein the fucosylated oligosaccharide is selected from one or more of the group consisting of 2'-fucosyllactose (2'-FL), 3-fucosyllactose (3-FL), 2',3-difucosyllactose (DiFL) and lacto-*N*-fucopentaose I (LNPF1).
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