CLAIMS

1. A method for crystallizing 2'-fucosyllactose (2'-FL) comprising:
   1) providing an aqueous solution or syrup comprising 2'-FL at a temperature of 35-60 °C,
   2) at the same temperature, adding a 10-30 wt% suspension of crystalline 2'-FL in acetic acid, preferably glacial acetic acid, to the aqueous solution or syrup comprising 2'-FL, thereby generating a slurry so that the amount of acetic acid in the slurry, after addition of the suspension of crystalline 2'-FL in acetic acid is 1.5-4 wt%,
   3) at a temperature of 35-60 °C, adding acetic acid, preferably glacial acetic acid, to the slurry to obtain a crystalline suspension, wherein the amount of acetic acid added in is calculated so that the acetic acid to water weight fraction in the crystalline suspension at the end of the addition of the acetic acid is 4-6, and
   4) filtering the crystalline 2'-FL from the crystalline suspension.

2. The method according to claim 1, wherein the crystalline 2'-FL is 2'-FL polymorph II referring to a crystalline modification of 2'-FL that comprises X-ray powder diffraction reflections, based on a measurement using CuKα radiation, at 16.98±0.20, 13.65±0.20 and 18.32±0.20 2Θ angles, more preferably at 16.98±0.20, 13.65±0.20, 18.32±0.20 and 21.70±0.20 2Θ angles, even more preferably at 16.98±0.20, 13.65±0.20, 18.32±0.20, 21.70±0.20 and 15.22±0.20 2Θ angles, most preferably at 16.98±0.20, 13.65±0.20, 18.32±0.20, 21.70±0.20, 15.22±0.20 and 20.63±0.20 2Θ angles, in particular at 16.98±0.20, 13.65±0.20, 18.32±0.20, 21.70±0.20, 15.22±0.20, 20.63±0.20 and 11.94±0.20 2Θ angles.

3. The method according to claim 1 or 2, wherein the total solid content of the aqueous solution or syrup according to step 1), as measured with a calibrated refractometer, is 57-80 °Bx (degrees Brix), and the concentration of 2'-FL in the aqueous solution or syrup according to step 1) is 40-70 wt%.

4. The method according to claim 3, wherein an aqueous solution or syrup comprising 2'-FL further comprises difucosyllactose (DFL) and optionally lactose.

5. The method according to claim 4, wherein
   the 2'-FL:DFL weight ratio is more than 2, more preferably more than 4, even more preferably more than 6, particularly between 8-13, and/or
   the 2'-FL:lactose weight ratio is 10-110 and the DFL:lactose weight ratio is 1-10.

6. The method according to any of claims 3 to 5, wherein the total solid content of the aqueous solution or syrup according to step 1) 67-77 °Bx, and the concentration of 2'-FL in the aqueous solution or syrup according to step 1) is 52-62 wt%.

7. The method according to claim 6, wherein the total solid content of the aqueous solution or syrup according to step 1) 70-75 °Bx, and the concentration of 2'-FL in the aqueous solution or syrup according to step 1) is 56-62 wt%.

8. The method according to claim 4, wherein the total solid content of the aqueous solution or syrup according to step 1) 67-75 °Bx, the concentration of 2'-FL in the aqueous solution or syrup according to step 1) is 52-62 wt%, and the aqueous solution or syrup is provided at least at 45 °C, preferably at 50±2 °C.

9. The method according to claim 3, wherein an aqueous solution or syrup comprising 2'-FL further comprises DFL and optionally lactose, and wherein the 2'-FL:DFL weight ratio is more than 13, preferably more than 25, such as more than 50, and the DFL:lactose weight ratio is less than 1.

10. The method according to claim 3 or 9, wherein the total solid content of the aqueous solution or syrup according to step 1) 67-77 °Bx, and the concentration of 2'-FL in the aqueous solution or syrup according to step 1) is 62-70 wt%, such as 64-68 wt%.

11. The method according to claim 10, wherein the aqueous solution or syrup is provided at least at 45 °C, preferably at 50±2 °C.

12. The method according to any one of the precedent claims, wherein the amount of the crystalline 2'-FL in the suspension of crystalline 2'-FL in acetic acid added in step 2) is 0.5-2 wt% relative to the total solid content of the aqueous solution or syrup provided in step 1).

13. The method according to claim 12, wherein the amount of acetic acid in the slurry after addition of the suspension is 2-3 wt%, more preferably wherein the 2'-FL/acetic acid suspension added in step 2) is of 24±2 wt%.

14. The method according to any one of the precedent claims, wherein the addition of acetic acid in step 3) is performed at a temperature of 30-40 °C.

15. The method according to claim 14, wherein the acetic acid is added continuously or in several portions in 12±2 hours, more preferably wherein the acetic acid to water weight fraction in the crystalline suspension at the end of the addition of the acetic acid is 4.6-6, preferably 4.6-5.5.

16. The method according to any one of the preceding claims, wherein the crystalline suspension obtained in step 3) is cooled to 0-25 °C, preferably 20-25 °C, and stirred for 5±1 hours.

17. The method according to any one of the precedent claims, wherein the aqueous solution or syrup provided in step 1) is a purified fermentation broth.

18. The method according to any one of the precedent claims, wherein crystalline 2'-FL having the following assay values is provided: 2'-FL is at least 97 %, DFL is less than 2 %, and acetic acid: less than 0.5 %.

19. The method according to claim 18, wherein in the crystalline 2'-FL the water content is less than 0.5 %, preferably less than 0.25 % or 0.1 %.