CLAIMS

~~1. A lactose free milk powder composition comprising a citrate preparation.~~

~~2. The lactose free milk powder composition of claim 1, wherein the citrate preparation is selected from a potassium citrate, a sodium citrate and a mixture thereof.~~

~~3~~1. A lactose free milk powder composition comprising citrate in an amount of about 1.5% to about 2.5%, specifically about 1.8% to about 2.3%, more specifically about 2.1% on dry matter basis, calculated as pure citrate.

~~4~~2. The lactose free milk powder composition of ~~any one of the preceding claims~~claim 1, wherein the lactose free milk powder composition is lactose hydrolysed.

~~5~~3. The lactose free milk powder composition of any one of the preceding claims, wherein the composition contains at most 0.1% of lactose, specifically at most 0.06%.

~~6~~4. The lactose free milk powder composition of any one of the preceding claims, wherein the composition contains about 30% to about 40% of glucose and galactose in total, specifically about 34%.

~~7~~5. The lactose free milk powder composition of any one of the preceding claims, wherein the composition contains protein in an amount of about 30% to about 50%, specifically about 35% to about 40%, more specifically about 36%.

~~8. The lactose free milk powder composition of any one of the preceding claims, wherein the composition contains fat in an amount of about 1% to about 30%, specifically about 20%.~~

~~9~~6. The lactose free milk powder composition of any one of the preceding claims, wherein the composition contains ash in an amount of about 6% to about 10%, specifically about 7.0%.

~~10~~7. The lactose free milk powder composition of any one of the preceding claims, wherein the composition comprises lactose free whole milk powder, lactose free skim milk powder, a sodium citrate and a potassium citrate.

~~11. The lactose free milk powder composition of any one of the preceding claims, wherein the energy content of the composition is about 1500 kJ/100 g to about 2100 kJ/100 g, specifically about 1900 kg/100g.~~

~~12~~8. The lactose free milk powder composition of any one of the preceding claims, wherein the composition has at least one of the following features:

- ~~the~~a sodium content of ~~the composition is in the range of~~ about 300 mg/100 g to about 500 mg/100 g, specifically about 370 mg/100 g~~.~~

~~13. The lactose free milk powder composition of any one of the preceding claims, wherein the~~ a potassium content of the composition is in the range of about 1400 mg/100 g to about 2000 mg/100 g, specifically about 1100 mg/100 g~~.~~

~~14. The lactose free milk powder composition of any one of the preceding claims, wherein.~~ ~~the~~a calcium content of the composition is in the range of about 1000 mg/100 g to about 1500 mg/100 g, specifically about 1100 mg/100 g~~.~~.

~~15. The lactose free milk powder composition of any one of the preceding claims, wherein.~~ ~~the~~a magnesium content of the composition in the range of about 90 mg/100 g to about 120 mg/100 g, specifically about 100 mg/100 g to about 1500 mg/100 g.

~~16. The lactose free milk powder composition of any one of the preceding claims, wherein.~~ ~~the~~a phosphorus content of the composition is in the range of about 700 mg/100 g to about 110 mg/100 g, specifically about 870 mg/100 g.

~~17. The lactose free milk powder composition of any one of the preceding claims, wherein.~~ ~~the~~a chloride content of the composition is in the range of about 900 mg/100 g to about 1400 mg/100 g, specifically about 1000 mg/100 g.

~~18. The lactose free milk powder composition of any one of the preceding claims, wherein.~~ ~~the~~a sodium chloride content of the composition is in the range of about 0.8% to about 1.3%, specifically about 0.9%.

~~19~~9. A method for producing a lactose free milk powder composition comprising the steps of:

- providing a milk raw material,
- reducing the lactose content of the milk raw material to provide a lactose-reduced milk raw material,
- adding at least one of milk, cream and milk minerals to the lactose-reduced milk raw material,
- subjecting the lactose-reduced milk raw material to lactose hydrolysis to provide a lactose free milk formulation,
- drying the lactose free milk formulation to provide a powdered lactose free milk formulation,
- adding a citrate preparation to the powdered lactose free milk formulation to provide a lactose free milk powder composition.

~~20. The method of claim 19, wherein the milk raw material has a fat content in the range of about 0.1% to about 4.7%.~~

~~21~~10. The method of claim ~~19 or 20~~9, wherein the reduction of lactose is carried out by ultrafiltration of the milk raw material.

~~22~~11. The method of any one of claims ~~19-21~~9-10, wherein the citrate preparation is added in an amount of about 1% to about 3%, specifically about 2%.

~~23~~12. The method of any one of claims ~~19-22~~9-11, wherein the citrate preparation comprises a potassium citrate, a sodium citrate and a mixture thereof.

~~24~~13. The method of any one of claims ~~19-23~~9-12, wherein the lactose free

milk powder composition comprises citrate in an amount of about 1.5% to about 2.5%, specifically about 1.8% to about 2.3%, more specifically about 2.1% on dry matter basis, calculated as pure citrate.

~~25. The method of any one of claims 19-24, wherein the lactose free milk powder composition contains at most 0.1% of lactose, specifically at most 0.06%.~~

~~26. The method of any one of claims 19-25, wherein the lactose free milk powder composition contains about 30% to about 40% of glucose and galactose in total, specifically about 34%.~~

~~27. The method of any one of claims 19-26, wherein the lactose free milk powder composition contains protein in an amount of about 30% to about 50%, specifically about 35% to about 40%, more specifically about 36%.~~

~~28. The method of any one of claims 19-27, wherein the lactose free milk powder composition contains fat in an amount of about 1% to about 30%, specifically about 20%.~~

~~29. The method of claim 28, wherein lactose free skim milk powder is produced.~~

~~30. The method of claim 28, wherein lactose free whole milk powder is produced.~~

~~31~~14. The method of ~~claim 29 and 30~~any one of claims 9-13, wherein the lactose free milk powder composition contains fat in an amount of about 1% to about 30%, specifically about 20%, and ~~the~~ lactose free skim milk powder and ~~the~~ lactose free whole milk powder are produced and mixed to provide a lactose free milk powder composition.

~~32. The method of any one of claims 19-31, wherein the lactose free milk powder composition contains ash in an amount of about 6% to about 10%, specifically about 7%.~~

~~33. The method of any one of claims 19-32, wherein the lactose free milk powder composition has an energy content of about 1500 kJ/100 g to about 2100 kJ/100 g, specifically about 1900 kg/100g.~~

~~34. The method of any one of claims 19-33, wherein the lactose free milk powder composition has at least one of the following features:~~

~~- a sodium content of about 300 mg/100 g to about 500 mg/100 g, specifically about 370 mg/100 g,~~

~~- a potassium content of about 1400 mg/100 g to about 2000 mg/100 g, specifically about 1100 mg/100 g,~~

~~- a calcium content of about 1000 mg/100 g to about 1500 mg/100 g, specifically about 1100 mg/100 g,~~

~~- a magnesium content of about 90 mg/100 g to about 120 mg/100 g,~~

~~specifically about 100 mg/100 g to about 1500 mg/100 g,~~

~~- a phosphorus content of about 700 mg/100 g to about 110 mg/100 g, specifically about 870 mg/100 g,~~

~~- a chloride content of about 900 mg/100 g to about 1400 mg/100 g, specifically about 1000 mg/100 g, and~~

~~- a sodium chloride content of about 0.8% to about 1.3%, specifically about 0.9%.~~

~~35~~15. Use of a lactose free milk powder composition of any one of claims ~~1-18~~1-8 or that produced by the method of any one of claims ~~19-34~~9-14 in the production of a lactose free low sugar acidified milk product, such as yoghurt.

~~36~~16. A method for producing a lactose free low sugar acidified milk product, comprising the steps of:

- providing a lactose free milk powder composition of any one of claims ~~1-18~~1-8 or that produced by the method of any one of claims ~~19-34~~9-14,
- mixing the lactose free milk powder composition with a liquid to provide a yoghurt milk,
- homogenizing the yoghurt milk,
- pasteurizing the yoghurt milk,
- fermenting the yoghurt milk with a yoghurt culture to provide a lactose free low sugar acidified milk product.

~~37. The method of claim 36, wherein the liquid is water.~~

~~38. The method of claim 36 or 37, wherein the yoghurt milk is lactose free.~~

~~39. The method of claim 38, wherein the lactose free yoghurt milk contains at most 0.01% of lactose.~~

~~40~~17. The method of ~~any one of claims 36-39~~claim 16, wherein the yoghurt milk comprises about 4.5% to about 5.0% of glucose and galactose.

~~41~~18. The method of any one of claims ~~36-40~~16-17, wherein the yoghurt milk comprises about 2.5% to about 8% of protein, specifically about 3% to about 5%, more specifically about 2.5% to about 4.5%, still more specifically about 3.5% to about 4.5%.

~~42. The method of any one of claims 36-41, wherein the yoghurt milk contains about 0.1% to about 10% of fat.~~

~~43~~19. The method of any one of claims ~~36-42~~16-18, wherein the yoghurt milk contains about 0.5% to about 1% of ash, specifically about 0.8%.

~~44~~20. The method of any one of claims ~~36-43~~16-19, wherein the yoghurt culture is selected from St thermophilus and Lb bulgaricus and lactis acid bacteria and a mixture thereof.

~~45. The method of any one of claims 36-44, wherein the pH of the lactose free low sugar acidified milk product is about 4.4 to about 4.6, specifically about 4.6.~~

~~46. The method of any one of claims 36-45, wherein the total sugar content of the lactose free low sugar acidified milk product is in the range of about 4% to about 8.4%.~~

~~47. The method of any one of claims 36-46, wherein the lactose free low sugar acidified milk product is yoghurt containing about 3% to about 5% of protein, about 0.1% to about 10% of fat, and about 4% to about 8.4% of sugars in total.~~

~~48. The method of any one of claims 36-47, wherein the lactose free low sugar acidified milk product had a citrate content of about 0.2% to about 0.25%% calculated as a pure citrate, specifically about 0.22%.~~

~~49. The method of any one of claims 36-48, wherein the energy content of the lactose free low sugar acidified milk product is in the range of about 80 kJ/100 g lactose free low sugar acidified product to about 550 kJ/100 g lactose free low sugar acidified product, specifically about 290 kJ.~~

~~50. The method of any one of claims 36-49, wherein the lactose free low sugar acidified milk product is heat-treated by pasteurisation, high-pasteurisation, thermisation, UHT treatment and ESL treatment.~~

~~51. The method of claim 50, wherein the heat treatment includes heating at 80°C - 90°C for 15 seconds to 10 minutes, UHT treatment at 120°C - 150°C for 1 to 6 seconds, and ESL treatment at 135°C for 0.5 seconds, specifically pasteurisation at 85°C for 5 minutes.~~