

drate (lactose+glucose); a greatly reduced lactose without necessitating the use of lactase enzyme.

EXAMPLE 14

Example 13 was repeated substituting the 2 kDa cut-off ultrafiltration membrane ("GR 90 2K") for the 1 kDa cut-off ultrafiltration filter used in Example 13. The pressure gradient was increased to 15 Bar.

EXAMPLE 15

500 ml of the final ultrafiltered permeate of Example 14 is pasteurized at about 72° C. for twenty minutes, supplemented with 2.5 ml of cleared anhydrous butter oil and homogenized as before.

EXAMPLE 16

500 ml of the final ultrafiltered permeate of Example 15 is pasteurized, supplemented with 2.5 ml of cleared anhydrous butter oil and homogenized.

In each of Examples 13-16, a 100 ml sample of the resulting permeate is mixed with about 2.0 grams of a commercial, vanilla-flavored oat soy preparation as set out above for body, flavor and emulsification enhancement.

The presence of medication utilized to treat milk-producing cows is undesirable in milk for human consumption. The ultrafiltration method described herein is believed to effectively reduce the level of veterinary pharmaceuticals contained in fractions of cow's milk. Approximately 75% of monocyclic drugs, e.g., penicillin and sulfonamides, which may be present in the milk, are attached to the milk's protein fraction. Approximately 25% or more of tricyclic compounds, and approximately 50% of bicyclic compounds, are similarly found attached to the protein fraction. Thus, it may be readily appreciated that removal of milk protein, as in the practice of the present invention, serves also to substantially reduce the level of veterinary medications which may be contained in cow's milk.

Recently, bovine immunodeficiency infection in cows has been reported to result in decreased milk production. While this viral agent has not been found to be transmissible to humans, the ultrafiltration procedure utilized herein excludes viruses and bacteria, which are generally larger than 100 kDa and 1,000 kDa respectively. Thus, ultrafiltration ensures that these disease agents which may be carried in milk protein hydrolysates and/or delactose whey permeates utilized in the practice of the invention, do not infect the resulting hypoallergenic milk product.

The anaphylactic type of allergic reactions may be caused by milk proteins. Many patients, particularly children, have symptoms of recurrent colds, bronchitis, asthmatic bronchitis, asthma, as well as recurrent sinusitis and/or otitis. These symptoms are often relieved by avoidance of milk. These symptoms may actually be caused by viral or bacterial protein present in milk. Where milk components such as milk protein hydrolysates and delactose whey are utilized in the practice of the present invention, the ultrafiltration procedure removes protein, as well as bacteria and viruses which may cause these symptoms.

The present invention may be embodied in other specific forms without departing from the spirit or essential attributes thereof and, accordingly, reference should be made to the appended claims, rather than to the foregoing specification, as indicating the scope of the invention.

I claim:

1. A palatable hypoallergenic milk product comprising:
 - (a) a mineral salt component substantially free of allergenic protein, said mineral salt component comprising a mixture of mineral salts having approximately the mineral content of natural milk;
 - (b) a carbohydrate component substantially free of allergenic protein, said carbohydrate component comprising one or more carbohydrates; and
 - (c) a hypoallergenic protein component having a molecular weight of not more than 5 kDa, said hypoallergenic protein component being selected from the group consisting of hypoallergenic protein, amino acids, polypeptides and combinations thereof.
2. A milk product according to claim 1 wherein the mixture of mineral salts is derived from delactosed whey.
3. A milk product according to claim 1 including hypoallergenic fat.
4. A milk product according to claim 3 wherein the hypoallergenic fat is selected from the group consisting of deproteinized butter, vegetable oil, and combinations thereof.
5. A milk product according to claim 1 wherein the hypoallergenic protein component is selected from the group consisting of amino acids and polypeptides which are derived from a milk protein.
6. A milk product according to claim 5 wherein the hypoallergenic component is selected from the group consisting of amino acids and polypeptides which are derived from lactalbumin.
7. A milk product according to claim 1 wherein the hypoallergenic protein component comprises polypeptides having a molecular weight of not more than about 3.5 kDa.
8. A milk product according to claim 7 wherein the hypoallergenic protein component comprises polypeptides having a molecular weight of not more than about 2 kDa.
9. A milk product according to claim 8 wherein said milk product is substantially free of protein of animal origin as determined by the substantial absence of protein bands upon sodium dodecyl sulfate polyacrylamide gel electrophoresis and silver staining.
10. A milk product according to claim 8 wherein the hypoallergenic protein component comprises polypeptides having a molecular weight of not more than about 1.5 kDa.
11. A milk product according to claim 10 wherein the hypoallergenic component comprises polypeptides having a molecular weight greater than about 1 kDa.
12. A milk product according to claim 7 wherein said milk product is substantially free of protein of animal origin as determined by the substantial absence of protein bands upon sodium dodecyl sulfate polyacrylamide gel electrophoresis and silver staining.
13. A milk product according to claim 10 wherein said milk product is substantially free of protein of animal origin as determined by the substantial absence of protein bands upon sodium dodecyl sulfate polyacrylamide gel electrophoresis and silver staining.
14. A milk product according to claim 1 wherein the hypoallergenic protein component is selected from the group consisting of cereal protein, vegetable protein, and combinations thereof.