

cut-off ultrafiltration membrane ("A.E.S.-1", Advanced Membrane Technology, San Diego, CA) at 70° F. and pH 6.1. Filtration was facilitated by maintaining a pressure gradient of about 75 p.s.i. to provide a filter flux of 24 l/m²-hour. The final ultrafiltered permeate was then transferred to screw top containers.

EXAMPLE 17

Example 16 was repeated substituting the 2 kDa cut-off ultrafiltration membrane ("GR90 2K", Dow Denmark, Naskov, Denmark) for the 1 kDa cut-off ultrafiltration used in Example 16. The pressure gradient required was increased to 350 p.s.i. The permeate was then transferred to screw top containers.

EXAMPLE 18

500 ml of the final ultrafiltered permeate of Example 16 was pasteurized at 72° C. for 20 minutes. This heating further serves to denature any remaining trace of protein. The permeate was then supplemented as follows: 15 grams of finely ground and sifted oat soy powder in the form of commercially available oat soy powder were added to the pasteurized permeate, followed by the addition of 2.5 ml of cleared anhydrous butter oil (as prepared in Example 11). The enriched permeate was then homogenized using a homogenizer operating at 9000 RPM. The formulation was then decanted into two 4 ounce glass bottles and refrigerated. The resulting tan colored suspension was found to be maintained upon gross inspection at two, eight and eighteen hours following preparation. The good taste and smell of cow's milk was observed, with an appearance similar to skim milk.

The presence of medication utilized to treat milk-producing cows is undesirable in milk for human consumption. The ultra filtration method described herein is believed to effectively reduce the level of veterinary pharmaceuticals contained in 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.

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 hypoallergenic milk product comprising:

- (a) a permeate substance free of hyperallergenic protein containing molecules therein having a molecular weight of less than or equal to about 5 kDa, said permeate being selected from the group consisting of milk permeate and whey permeate; and
- (b) a nutritionally effective amount of an additive selected from the group consisting of short chain polypeptides, amino acids, and a combination thereof.

2. A milk product according to claim 1 further comprising hypoallergenic fat.

3. A milk product according to claim 2 wherein said hypoallergenic fat is selected from the group consisting of deproteinized butter, vegetable oil and combinations thereof.

4. A process for making a hypoallergenic product comprising the steps of:

- (a) supplementing a crude permeate derived from milk or whey with an added component selected from the group consisting of amino acids and polypeptides;
- (b) filtering the supplemented crude permeate through a filtration membrane which will only allow molecules with a molecular weight of less than or equal to about 5 kDa to pass therethrough; and
- (c) collecting said permeate.

5. A process according to claim 4 wherein said crude permeate is prepared by filtration of milk or whey through a filtration membrane which will only allow molecules with a molecular weight of less than or equal to about 10 kDa to pass therethrough.

6. A process according to claim 5 wherein the collected permeate is supplemented with hypoallergenic fat.

7. A process according to claim 4 wherein the collected permeate is supplemented with hypoallergenic fat.

8. A process according to claim 4 wherein the filtration membrane will only allow molecules with a molecular weight of less than or equal to about 3.5 kDa to pass therethrough.

9. A process according to claim 8 wherein the filtration membrane will only allow molecules with a molecular weight of less than or equal to about 2 kDa to pass therethrough.

10. A process according to claim 9 wherein the filtration membrane will only allow molecules with a molecular weight of less than or equal to about 1 kDa to pass therethrough.

11. A process of making a hypoallergenic milk product comprising the steps of:

- (a) separating milk or whey to isolate molecules thereof having a molecular weight of about 5 kDa or less to produce a permeate;
- (b) collecting said permeate;
- (c) admixing into said permeate an additive selected from the group consisting of amino acids, short chain polypeptides and mixtures thereof to form a supplemented permeate; and
- (d) adding a hypoallergenic protein into said supplemented permeate, said hypoallergenic protein being selected from the group consisting of cereal protein, vegetable protein and combinations thereof.

12. A process for making a palatable hypoallergenic milk product comprising the steps of:

- (a) supplementing a milk component with at least one component selected from the group consisting of amino acids and polypeptides;
- (b) filtering the supplemented milk component through a filtration medium which will allow molecules with a molecular weight of less than or equal to about 5 kDa to pass therethrough; and
- (c) collecting the permeate from the filtration step.

13. A process according to claim 12 wherein the filtration membrane will only allow molecules having a molecular weight less than or equal to about 3.5 kDa to pass therethrough.