CLAIMS

What is claimed is:

1. A method for preparing a nutritional composition, the method comprising:

hydrolyzing a milk protein preparation selected from the group consisting of: a casein, acid casein or caseinate, beta-casein enriched casein, acid casein or caseinate, an alpha-casein enriched casein, acid casein or caseinate, and/or a kappa-casein enriched casein, acid casein or caseinate using a protease selected from the group consisting of: trypsin; trypsin-like protease; chymotrypsin; chymotrypsin-like protease; pepsin; and plasmin to form a protein hydrolysate, where in the protein hydrolysate comprises alpha-casein peptides, beta-casein peptides and kappa-casein peptides; and

forming a nutritional composition comprising the protein hydrolysate,

wherein beta-casein peptides provide 25% to 60% of the total peptides in the nutritional composition, and the kappa-casein peptides provide 1% to 10% of the total peptides in the nutritional composition.

2. The method of claim 1, wherein the nutritional composition is a pediatric nutritional composition.

3. The method of claim 2, wherein the pediatric nutritional composition is an infant formula.

4. The method of any of claims 1 to 3, wherein the nutritional composition further comprises:

(i) a protein source,

(ii) a lipid source, and/or

(iii) a carbohydrate source.

5. The method of claim 4, wherein the nutritional composition further comprises

(iv) a prebiotic, and/or

(vi) a probiotic.

6. The method of claim 5, wherein the probiotic comprises a *Lactobacillus* species.

7. The method of claim 6, wherein the probiotic comprises *Lactobacillus rhamnosus* GG.

8. The method of claim 5, wherein the probiotic is non-viable.

9. The method of claim 5, wherein the probiotic is viable.

10. The method of any of claims 5 to 9, wherein the probiotic is present in an amount ranging from about 1 x 10^5 cfu/100 kcals to about 1.5 x 10^9 cfu/100 kcals.

11. The method of any of claims 1 to 10, wherein the composition further comprises at least one human milk oligosaccharide (HMO).

12. The method of any of claims 1 to 11, wherein the composition further comprises a long chain polyunsaturated fatty acid.

13. The method of claim 12, wherein the long chain polyunsaturated fatty acid comprises docosahexaenoic acid and/or arachidonic acid.

14. The method of any of claims 1 to 13, wherein the composition further comprises a source of β-glucan.

15. The method of claim 14, wherein the source of β -glucan comprises a β-1,3-glucan.