Claims

1. A synthetic nutritional composition comprising:
   i. ruminant milk fat wherein the milk fat is capable of activating the aryl hydrocarbon receptor (AhR) in an AhR activity assay; and
   ii. a ruminant immunoglobulin in an amount of between 115 µg and 50 mg per gram of dry composition;

   characterized in that at least 30% of the ruminant immunoglobulin is non-denatured;
   and wherein the amount of milk fat is between 10 and 60 g of fat per 100 gram of formula, wherein the amount of ruminant fat is between 5 and 90 wt% as determined to the total amount of fat.

2. The nutritional composition of claim 1, wherein the ruminant milk fat is bovine milk fat and the fat is selected from the group consisting of whole milk, cream, and anhydrous milk fat (AMF); preferably wherein the bovine is a cow.

3. The nutritional composition of any of the preceding claims wherein the composition is in a dry state comprising at least 70 wt% dry matter preferably at least 80 wt% dry matter, more preferably at least 90 wt% dry matter, most preferably at least 92 wt% dry matter.

4. The nutritional composition of any of the preceding claims wherein the immunoglobulin is selected from one or more of the group consisting of IgG, IgA, IgM, sIgA, preferably wherein the immunoglobulin is IgG.

5. The nutritional composition of any of the preceding claims wherein the biological activity of the immunoglobulin is determined in an ELISA essay that discriminates between native and denatured immunoglobulin.

6. The nutritional composition of any of the preceding claims, wherein the milk fat activates the aryl hydrocarbon receptor in a Calux assay.

7. The nutritional composition of any of the preceding claims, further comprising one or more oligosaccharides selected from the group consisting of human milk oligosaccharides (HMO) and non-digestible oligosaccharides; preferably wherein the amount of HMO is between 0.01 and 5.0 gram per 100 gram of composition and / or wherein the amount of non-digestible oligosaccharide is between 0.1 and 25 gram per 100 gram of dry composition.

8. The nutritional composition of any of the preceding claims further comprising a probiotic.

9. The nutritional composition of any of the preceding claims further comprising lactoferrin, preferably bovine lactoferrin.

10. The nutritional composition of any of the preceding claims comprising

i. between 10 and 60 g of fat per 100 gram of formula, wherein the amount of ruminant fat is between 5 and 90 wt% as determined to the total amount of fat;

ii. between 115 µg - 50 mg of ruminant immunoglobulin per gram of composition (dry weight);

iii. between 10^6 and 10^9 cfu of probiotic per grams of dry product;

iv. between 0.1 and 25 gram of non-digestible oligosaccharide per 100 gram of formula (dry weight);

v. between 0.01 and 5.0 gram of HMO per 100 gram of dry product;

vi. between 0.1 and 20 mg of lactoferrin per gram of dry product.

11. The nutritional composition of any of the preceding claims wherein the composition is ingredient premix, preferably an early life nutrition premix.

12. The nutritional composition of any of the preceding claims, wherein the composition is selected from one or more of the group consisting of an infant formula, a follow-on formula and young child formula.

13. The nutritional composition of any anyone of claims 1 to 11, wherein the composition is a preterm formula or an adult or elderly formula.

14. Use of the nutritional composition of anyone of claims 1 to 13 in a preterm formula, an infant formula, a follow-on formula or young child formula.

15. Use of ~~T~~the nutritional composition of any of claims 1 to 13 in the manufacture of a medicament for ~~use in~~ the treatment of any one or more of the indications selected from the group consisting of decreased intestinal barrier function, necrotizing enterocolitis (NEC), irritable bowel syndrome (IBS), inflammatory bowel disease (IBD), non-steroid anti-inflammatory drug (NSAID)-induced gut damage, and perioperative endotoxemia; or to treat type 2 diabetes.