additionally be beneficial if the nutritional compositions could also improve the barrier function and reduce the inflammation of the injured gastrointestinal tract.

SUMMARY OF THE DISCLOSURE

[0005] The present disclosure is directed to the use of nutritional compositions, including human milk fortifiers, preterm and term infant formulas, pediatric formulas, follow on formulas and adult formulas including galactooligosaccharides alone or in combination with other components such as other prebiotic oligosaccharides and/or probiotics, for preventing injury to the gastrointestinal tract and/or enhancing the healing of the gastrointestinal tract of an infant, toddler, child, or adult. More particularly, the nutritional compositions can improve gastrointestinal healing through enhancing the expression of various mucin-associated proteins, which can stabilize the mucus layer, reduce inflammation, and promote healing of epithelial tissue.

[0005a] One embodiment is directed to the use of a nutritional composition comprising a galactooligosaccharide in a concentration of from about 8 kg/1000 kg of the nutritional composition to about 160 kg/1000 kg of the nutritional composition for the manufacture of a medicament for inducing the healing response of the gastrointestinal tract to treat an injury to the gastrointestinal tract of an individual.

[0005b] One embodiment is directed to the use of a nutritional composition comprising a galactooligosaccharide in a concentration of from about 8 kg/1000 kg of the nutritional composition to about 160 kg/1000 kg of the nutritional composition for the manufacture of a medicament for inducing the expression of one or more mucin-associated proteins to treat an injury to the gastrointestinal tract of an individual.

[0006] One embodiment is directed to a method of enhancing healing of the gastrointestinal tract of an individual. The method comprises identifying an individual having an injured gastrointestinal tract and administering to the individual a nutritional composition comprising a galactooligosaccharide.

[0007] Another embodiment is directed to a method of reducing the incidence of intestinal mucosa injury. The method comprises identifying an individual susceptible to an

intestinal mucosa injury and administering to the individual a nutritional composition comprising a galactooligosaccharide.

[0008] Another embodiment is directed to a method of improving the barrier function in the gastrointestinal tract of an individual. The method comprises identifying an individual in need of an increased barrier function of the gastrointestinal tract and administering to the individual a nutritional composition comprising a galactooligosaccharide.

[0009] Another embodiment is directed to a method of reducing the incidence of inflammation of the gastrointestinal tract of an individual. The method comprises identifying an individual susceptible to inflammation of the gastrointestinal tract and

CLAIMS

1. Use of a nutritional composition comprising a galactooligosaccharide for the manufacture of a medicament for stimulating the healing response of the gastrointestinal tract to treat an injury to the gastrointestinal tract of an individual.

2. The use of claim 1, wherein the gastrointestinal tract is injured as a result of at least one of antibiotic therapy, radiation therapy, chemotherapy, surgery, enteric infection, inflammatory bowel disease, colitis, bowel obstruction, and chronic stress.

3. The use of claim 1, wherein the nutritional composition further comprises at least one probiotic.

4. The use of claim 1, wherein the nutritional composition is selected from the group consisting of a human milk fortifier, an infant formula, a pediatric formula, a follow on formula, and an adult nutritional composition.

5. The use of claim 4, wherein the nutritional composition comprises the galactooligosaccharide in a concentration of from about 8 kg/1000 kg of the nutritional composition to about 160 kg/1000 kg of the nutritional composition.

6. The use of claim 1, wherein the nutritional composition comprises the galactooligosaccharide in a concentration of from about 164 kg/18,000 pounds (8165 kg) of the nutritional composition to about 818 kg/18,000 pounds (8165 kg) of the nutritional composition.

7. The use of claim 1, wherein the nutritional composition further comprises at least one human milk oligosaccharide.

8. Use of a nutritional composition comprising a galactooligosaccharide for the manufacture of a medicament for stimulating the expression of one or more mucin-associated proteins to treat an injury to the gastrointestinal tract of an individual.

9. The use of claim 8, wherein enhancing the expression of one or more mucin-associated proteins reduces the incidence of inflammation of the gastrointestinal tract of an individual.

10. The use of claim 8, wherein enhancing the expression of one or more mucin-associated proteins improves the barrier function in the gastrointestinal tract of an individual.

11. The use of claim 8, wherein the nutritional composition further comprises at least one probiotic.

12. The use of claim 8, wherein the nutritional composition is selected from the group consisting of a human milk fortifier, an infant formula, a pediatric formula, a follow on formula, and an adult nutritional composition.

13. The use of claim 8, wherein the nutritional composition comprises the galactooligosaccharide in a concentration of from about 8 kg/1000 kg of the nutritional composition to about 160 kg/1000 kg of the nutritional composition.

14. The use of claim 8, wherein the nutritional composition comprises the galactooligosaccharide in a concentration of from about 164 kg/18,000 pounds (8165 kg) of the nutritional composition to about 818 kg/18,000 pounds (8165 kg) of the nutritional composition.

CLAIMS

1. Use of a nutritional composition comprising a galactooligosaccharide in a concentration of from about 8 kg/1000 kg of the nutritional composition to about 160 kg/1000 kg of the nutritional composition for the manufacture of a medicament for inducing the healing response of the gastrointestinal tract to treat an injury to the gastrointestinal tract of an individual.

2. The use of claim 1, wherein the gastrointestinal tract is injured as a result of at least one of antibiotic therapy, radiation therapy, chemotherapy, surgery, enteric infection, inflammatory bowel disease, colitis, bowel obstruction, and chronic stress.

3. The use of claim 1, wherein the nutritional composition further comprises at least one probiotic.

4. The use of claim 1, wherein the nutritional composition is selected from the group consisting of a human milk fortifier, an infant formula, a pediatric formula, a follow on formula, and an adult nutritional composition.

5. The use of claim 1, wherein the nutritional composition further comprises at least one human milk oligosaccharide.

6. Use of a nutritional composition comprising a galactooligosaccharide in a concentration of from about 8 kg/1000 kg of the nutritional composition to about 160 kg/1000 kg of the nutritional composition for the manufacture of a medicament for inducing the expression of one or more mucin-associated proteins to treat an injury to the gastrointestinal tract of an individual.

7. The use of claim 6, wherein enhancing the expression of one or more mucin-associated proteins reduces the incidence of inflammation of the gastrointestinal tract of an individual.

8. The use of claim 6, wherein enhancing the expression of one or more mucin-associated proteins improves the barrier function in the gastrointestinal tract of an individual.

9. The use of claim 6, wherein the nutritional composition further comprises at least one probiotic.

10. The use of claim 6, wherein the nutritional composition is selected from the group consisting of a human milk fortifier, an infant formula, a pediatric formula, a follow on formula, and an adult nutritional composition.