Claims

1. Use of an ingestible composition comprising sphingan oligosaccharide (SOS), wherein the amount of the SOS is selected from 1 g to 10 g, 1 g to 9 g, 1 g to 8 g, 1 g to 7 g, 1 g to 6 g, 1 g to 5 g, 1 g to 4 g, 1 g to 3 g, or 2 g; and wherein the SOS comprises a high acyl sphingan oligosaccharide, an intermediate acyl sphingan oligosaccharide, a low acyl sphingan oligosaccharide, or a combination thereof, and an ingestible medium in the manufacture of a medicament for the treatment of metabolic syndrome and obesity, inflammatory bowel diseases (IBD) such as Crohn's disease (CD) and ulcerative colitis (UC), irritable bowel syndrome (IBS), celiac disease, diabetes, allergies, asthma and autoimmune diseases in a human, wherein the medicament promotes beneficial bacterial growth in the colon of the human.

2. The use of claim 1, wherein the amount of the SOS is selected from 10 mg/kg to 150 mg/kg, 10 mg/kg to 140 mg/kg, 10 mg/kg to 130 mg/kg, 10 mg/kg to 120 mg/kg, 10 mg/kg to 110 mg/kg, 10 mg/kg to 100 mg/kg, 10 mg/kg to 90 mg/kg, 10 mg/kg to 80 mg/kg, 10 mg/kg to 70 mg/kg, 10 mg/kg to 60 mg/kg, 10 mg/kg to 50 mg/kg, 10 mg/kg to 40 mg/kg, or 20 mg/kg to 30 mg/kg of the human ingesting the composition.

3. The use of claim 1, wherein the SOS comprises a gellan oligosaccharide obtained from a gellan gum.

4. The use of any one of claims 1 to 3, wherein the SOS is obtainable by a process comprising:

preparing a first composition comprising a high/intermediate/low acyl sphingan or a high/intermediate/low acyl sphingan polysaccharide and a liquid medium;

hydrolyzing a glycosidic bond of the high/intermediate/low acyl sphingan or the high/intermediate/low acyl sphingan polysaccharide to obtain a second composition;

subjecting the second composition to ultrafiltration, size-exclusion chromatography, precipitation, centrifugation, or a combination thereof to obtain the SOS; and

optionally, isolating or recovering the SOS.

5. The use of claim 4, wherein said hydrolyzing is mediated by an acid, an enzyme, sonication, high-pressure homogenization, radiation, or a combination thereof.

6. The use of claim 5, wherein the enzyme is a gellanase, a rhamnogalacturonan endolyase (EC 4.2.2.23), a rhamnogalacturonan exolyase (EC 4.2.2.24), a gellan lyase (EC 4.2.2.25), or a combination thereof.

7. The use of claim 4, wherein said subjecting comprises filtering the second composition through a membrane having a molecular weight cutoff of 5 kDa to 10kDa to obtain a filtrate comprising the SOS.

8. The use of any one of claims 1 to 7, wherein the SOS comprises a high/intermediate/low sphingan oligosaccharide selected from:

(i) a composition comprising Glc,GlcA, Glc,GlcA,Glyc, Glc,GlcA,Rha, Glc,GlcA,Rha,Glyc, Glc,GlcA,Rha,-H2O, Glc,Rha, Glc,Rha+28 , Glc2,GlcA, Glc2,GlcA,Rha, Glc2,GlcA,Rha,+28, Glc2,GlcA,Rha,Ac, Glc2,GlcA,Rha,Glyc, Glc2,GlcA,Rha,Glyc,+28, Glc2,GlcA,Rha,Glyc.-H2O, Glc2,GlcA,Rha,-H2O, Glc2,GlcA,Rha2,Glyc, Glc2,GlcA2,Rha, Glc2,GlcA2,Rha2,Ac2,Glyc2,-H2O, Glc2,Rha, Glc3,GlcA,Rha, Glc3,GlcA,Rha2, Glc3,GlcA,Rha2, Glc3,GlcA,Rha2, Glc3,GlcA,Rha2,Glyc, Glc3,GlcA2,Rha, Glc3,GlcA2,Rha,Glyc, Glc3,GlcA2,Rha2,Glyc, Glc3,GlcA3,Rha2, Glc3,GlcA3,Rha2, Glc4,GlcA,Rha2,+43, Glc4,GlcA,Rha2,Ac, Glyc, Glc4,GlcA2,Rha, Glc4,GlcA2,Rha,Ac,Glyc,-H2O, Glc4,GlcA2,Rha,Ac,Glyc2, Glc4,GlcA2,Rha2,Ac,Glyc, Glc4,GlcA2,Rha2,Glyc, Glc4,GlcA3,Rha2, Glc4,GlcA2,Rha3,Ac, Glc4,GlcA3,Rha2/Glc4,GlcA2,Rha2,Glyc2, Glc5,GlcA2,Rha2, Glc5,GlcA2,Rha2, Glc5,GlcA2,Rha2,Ac, Glc5,GlcA4,Rha2, Glc6,GlcA3,Rha3, Glc(Ac/Glyc)x,GlcAx,Glcx,Rhax (where x is 4 to 25), Glcx,GlcAx,Glcx,Rhax (where x is 4 to 25), or a combination thereof;

(ii) a composition comprising a tetramer (Glc,GlcA,Glc,Rha), a tetramer (Glc,GlcA,Glc,Rha) with acetate and/or glycerate, an octamer (Glc,GlcA,Glc,Rha,Glc,GlcA,Glc,Rha), an octamer (Glc,GlcA,Glc,Rha,Glc,GlcA,Glc,Rha) with acetate and/or glycerate, Glc,GlcA,Glc, Rha,Glc,GlcA, Glc,Rha;

(iii) a composition comprising a tetramer (Glc,GlcA,Glc,Rha), an octamer (Glc,GlcA,Glc,Rha,Glc,GlcA,Glc,Rha), a pentamer (Glc,GlcA,Glc,Rha,Glc), GlcA,Glc,Rha, Glc,GlcA,Glc, Glc,GlcA;

(iv) a composition comprising Glc(Glc-Glc),GlcA, Glc(Glc-Glc), GlcA,Glc, Glc,Glc;

(v) a composition comprising a tetramer (Glc,GlcA,Glc,Rha), GlcA,Glc,(Rha-Rha), Glc,(Rha-Rha),Rha, GlcA,Glc,Rha, Glc,GlcA,Glc, Rha,Glc, GlcA,Glc;

(vi) a composition comprising Glc,GlcA, Glc,GlcA,Glyc, Glc,GlcA,Rha, Glc,GlcA,Rha,Glyc, Glc,Rha, Glc,Rha+28 , Glc2,GlcA, Glc2,GlcA,Rha, Glc2,GlcA,Rha,+28, Glc2,GlcA,Rha,Ac, Glc2,GlcA,Rha,Glyc, Glc2,GlcA,Rha,Glyc,+28, Glc3,GlcA,Rha, Glc3,GlcA,Rha2, Glc3,GlcA,Rha2, Glc3,GlcA,Rha2, Glc3,GlcA,Rha2,Glyc, Glc3,GlcA2,Rha,Glyc, Glc3,GlcA2,Rha2,Glyc, Glc3,GlcA3,Rha2, Glc4,GlcA,Rha2,Ac, Glyc, Glc4,GlcA2,Rha2,Ac,Glyc, Glc4,GlcA2,Rha2,Glyc, Glc4,GlcA2,Rha3,Ac, Glc4,GlcA3,Rha2/Glc4,GlcA2,Rha2,Glyc2, Glc5,GlcA2,Rha2, Glc5,GlcA2,Rha2,Ac, Glc(Ac/Glyc)x,GlcAx,Glcx,Rhax (where x is 4 to 25), or a combination thereof;

(vii) a composition comprising Glc,GlcA, Glc,GlcA,Rha, Glc,Rha, Glc,Rha+28 , Glc2,GlcA,Rha, Glc2,GlcA,Rha,+28, Glc2,GlcA2,Rha, Glc3,GlcA,Rha, Glc3,GlcA,Rha2, Glc3,GlcA2,Rha, Glc3,GlcA3,Rha2, Glc3,GlcA3,Rha2, Glc4,GlcA,Rha2,+43, Glc4,GlcA2,Rha, Glc4,GlcA3,Rha2, Glc5,GlcA2,Rha2, Glc5,GlcA2,Rha2, Glc5,GlcA4,Rha2, Glc6,GlcA3,Rha3, Glc(Ac/Glyc)x,GlcAx,Glcx,Rhax (where x is 4 to 25), or a combination thereof;

(viii) a composition comprising Glc,GlcA,Rha,-H2O, Glc,Rha, Glc2,GlcA,Rha,-H2O, Glc2,Rha; and

(ix) a composition comprising Glc,GlcA, Glc,GlcA,Glyc, Glc,GlcA,Rha, Glc,GlcA,Rha,Glyc, Glc,Rha, Glc,Rha+28 , Glc2,GlcA, Glc2,GlcA,Rha, Glc2,GlcA,Rha,+28, Glc2,GlcA,Rha,Ac, Glc2,GlcA,Rha,Glyc, Glc2,GlcA,Rha,Glyc,+28, Glc2,GlcA,Rha,Glyc.-H2O, Glc2,GlcA,Rha2,Glyc, Glc2,GlcA2,Rha2,Ac2,Glyc2,-H2O, Glc3,GlcA,Rha, Glc3,GlcA,Rha2, Glc3,GlcA,Rha2,Glyc, Glc3,GlcA2,Rha,Glyc, Glc3,GlcA2,Rha2,Glyc, Glc3,GlcA3,Rha2, Glc4,GlcA,Rha2,+43, Glc4,GlcA,Rha2,Ac, Glyc, Glc4,GlcA2,Rha,Ac,Glyc,-H2O, Glc4,GlcA2,Rha,Ac,Glyc2, Glc4,GlcA2,Rha2,Ac,Glyc, Glc4,GlcA2,Rha2,Glyc, Glc4,GlcA3,Rha2, Glc4,GlcA2,Rha3,Ac, Glc4,GlcA3,Rha2/Glc4,GlcA2,Rha2,Glyc2, Glc5,GlcA2,Rha2, Glc5,GlcA2,Rha2,Ac, Glc(Ac/Glyc)x,GlcAx,Glcx,Rhax (where x is 4 to 25), or a combination thereof;

or a combination thereof.