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Patent Consulting | Research | IP and Litigation Support

Invalidity Search Report
On
"Pet Food Supplement"
(US10245293B1)

12th April, 2019

Contents

1. Search objective

The objective of this assignment was to determine the validity of independent claims 1, 3, 5, 21 & 22 and dependent claims 2, 4, 6-20 and 23-24 of US patent titled "**Pet Food Supplement**" with Patent Publication No. **US10245293B1**.

2. Understanding of the subject matter

The Invalidation search has been conducted with respect to the following:

Patent/Publication Number	**US10245293B1**
Title	Pet Food Supplement
Inventors	Jamy A. Bascharon
Original Assignee/Applicant	VETNIQUE LABS LLC
Filing Date	Aug 26, 2015
Priority Date	May 04, 2012
Publication Date	Apr 02, 2019

Independent claim 1 read as follows:

1. A method of treatment or prevention of anal gland disease, the method comprising administering to a subject in need of such treatment an effective amount of one or more compositions comprising (1) a probiotic, a prebiotic, or both, (2) a fiber source, and (3) an anti-inflammatory agent selected from the group consisting of fish oil, bioflavonoid, bromelain, Vitamin C, Vitamin E, L-glutathione, selenium, resveratrol, papain, flax seed oil, curcumin, ginger, alpha lipoic acid, zinc, quercetin, and a combination thereof.

Dependent claim 2 read as follows:

2. The method according to claim 1, wherein the subject is a dog or a cat.

Independent claim 3 read as follows:

3. A method of treatment or prevention of anal gland disease, the method comprising administering to a subject in need of such treatment an effective amount of one or more compositions comprising (1) two or more fiber sources, (2) an anti-inflammatory agent selected from the group consisting of fish oil, bioflavonoid, bromelain, Vitamin C, Vitamin E, L-glutathione, selenium, resveratrol, papain, flax seed oil, curcumin, ginger, alpha lipoic acid, zinc, quercetin, and a combination thereof, and (3) optionally one additional agent selected

from the group selected from a probiotic, a prebiotic, an anti-histamine, an antibiotic, and an anti-diarrhea agent.

Dependent claim 4 read as follows:

4. The method according to claim 3, wherein the subject is a dog or a cat.

Independent claim 5 read as follows:

5. A method of treatment or prevention of anal gland disease, the method comprising administering to a subject in need of such treatment an effective amount of one or more compositions comprising two or more fiber sources and an anti-inflammatory agent selected from bromelain, quercetin, or a combination thereof.

Dependent claim 6 read as follows:

6. The method according to claim 5, wherein one fiber source is pumpkin or pumpkin seed.

Dependent claim 7 read as follows:

7. The method according to claim 1, wherein the probiotic is a strain selected from the group consisting of Bifidobacterium, Lactobacillus, Lactococcus, Saccharomyces, Streptococcus, and a combination thereof.

Dependent claim 8 read as follows:

8. The method according to claim 7, wherein the probiotic is Lactobacillus acidophilus.

Dependent claim 9 read as follows:

9. The method according to claim 1, wherein the fiber source is selected from the group consisting of barley, flax seed, digestion resistant maltodextrin, beet pulp, guar gum, inulin, cellulose, larch arabinogalactan, methylcellulose, oat bran, oligofructose, pectin, pumpkin powder, pumpkin seed, psyllium, rice bran, wheat bran, wheat dextrin, and a combination thereof.

Dependent claim 10 read as follows:

10. The method according to claim 1, wherein the anti-inflammatory agent is bromelain, quercetin, or a combination thereof.

Dependent claim 11 read as follows:

11. The method according to claim 1, wherein the composition comprises: L. Acidophilus, pumpkin seed, quercetin, and bromelain.

Dependent claim 12 read as follows:

12. The method according to claim 3, wherein the probiotic is a strain selected from the group consisting of Bifidobacterium, Lactobacillus, Lactococcus, Saccharomyces, Streptococcus, and a combination thereof.

Dependent claim 13 read as follows:

13. The method according to claim 12, wherein the probiotic is Lactobacillus acidophilus.

Dependent claim 14 read as follows:

14. The method according to claim 3, wherein the fiber source is selected from the group consisting of barley, flax seed, digestion resistant maltodextrin, beet pulp, guar gum, inulin, cellulose, larch arabinogalactan, methylcellulose, oat bran, oligofructose, pectin, pumpkin powder, pumpkin seed, psyllium, rice bran, wheat bran, wheat dextrin, and a combination thereof.

Dependent claim 15 read as follows:

15. The method according to claim 3, wherein the anti-inflammatory agent is bromelain, quercetin, or a combination thereof.

Dependent claim 16 read as follows:

16. The method according to claim 3, wherein the composition comprises: L. Acidophilus, pumpkin seed, quercetin, and bromelain.

Dependent claim 17 read as follows:

17. The method according to claim 1, wherein the anti-inflammatory agent is quercetin, where quercetin is present in the amount of about 3 weight % to about 15 weight %.

Dependent claim 18 read as follows:

18. The method according to claim 17, wherein the composition further comprising a digestive enzyme.

Dependent claim 19 read as follows:

19. The method according to claim 18, wherein the digestive enzyme is bromelain.

Dependent claim 20 read as follows:

20. The method according to claim 18, wherein the composition further comprising apple pectin.

Independent claim 21 read as follows:

21. A method of treatment or prevention of anal gland disease, the method comprising administering to a subject in need of such treatment an effective amount of one or more compositions comprising (1) a probiotic, a prebiotic, or both, (2) a fiber source, and (3) an anti-inflammatory agent selected from the group consisting of fish oil, bioflavonoid, bromelain, Vitamin C, Vitamin E, L-glutathione, selenium, resveratrol, papain, flax seed oil, curcumin, ginger, alpha lipoic acid, zinc, quercetin, and a combination thereof, wherein the administration is oral.

Independent claim 22 read as follows:

22. A method of treatment or prevention of anal gland disease, the method comprising administering to a subject in need of such treatment an effective amount of one or more compositions comprising (1) two or more fiber sources, (2) an anti-inflammatory agent selected from the group consisting of fish oil, bioflavonoid, bromelain, Vitamin C, Vitamin E, L-glutathione, selenium, resveratrol, papain, flax seed oil, curcumin, ginger, alpha lipoic acid, zinc, quercetin, and a combination thereof, and (3) optionally one additional agent selected from the group selected from a probiotic, a prebiotic, an anti-histamine, an antibiotic, and an anti-diarrhea agent, wherein the administration is oral.

Dependent claim 23 read as follows:

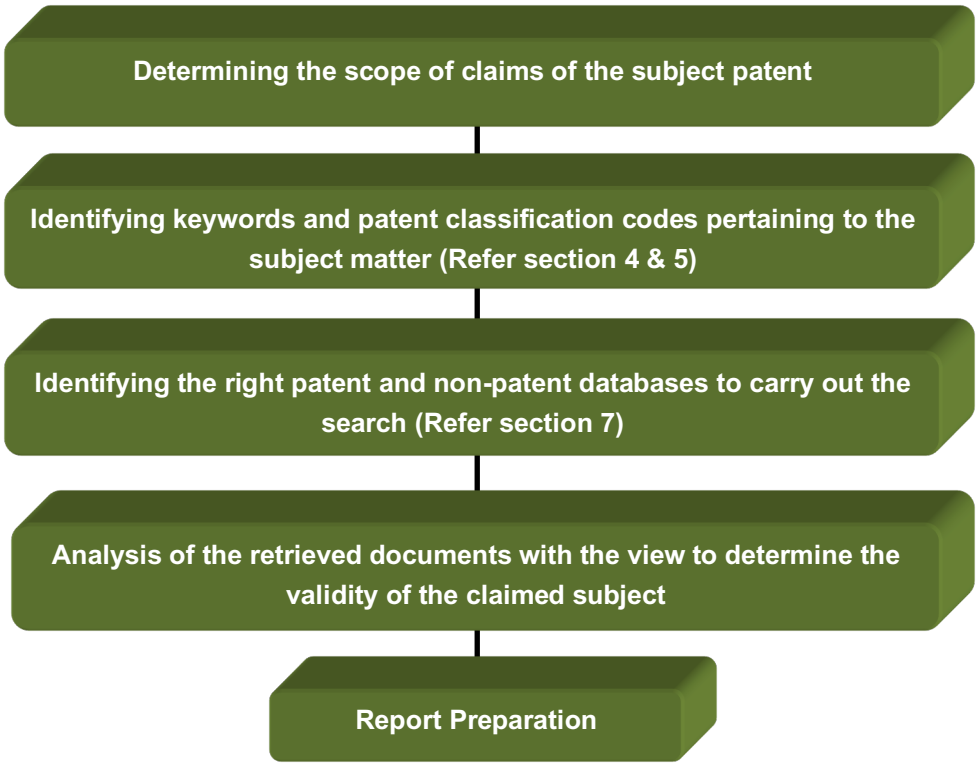
23. The method according to claim 21, wherein the anti-inflammatory agent is bromelain, Vitamin C, Vitamin E, quercetin, or a combination thereof.

Dependent claim 24 read as follows:

24. The method according to claim 22, wherein the anti-inflammatory agent is bromelain, Vitamin C, Vitamin E, quercetin, or a combination thereof.

3. Research Methodology

The following search methodology was adopted for finding the relevant prior art documents.



4. Keywords

One or more of the following exemplary set of keywords listed below have been used in different combinations while conducting the search.

Method/ process/ procedure
Treatment/ prevent/ cure/ reduce/ regression/ prophylaxis/ decrease/ alleviate/ treat
Anal gland/ anal sac/ gastrointestinal/ gut/ alimentary canal
Disease/ disorder/ infection/ inflammation/ swelling/ neoplasm/ constipation/ diarrhea/ condition/ problem/ sacculitis/ abscess
Pet/ dog/ cat/ feline/ canine/ animal/ puppy/ kitten/ mammal
Food/ diet/ dietary/ nutritional/ feed/ nutraceutical
Formulation/ composition/ formula/ mixture/ supplement/ additive
Fiber/ fibre/ pectin/ cellulose/ lignin/ barley/ flax seed/ maltodextrin/ beet pulp/ guar gum/ inulin/ starch arabinogalactan/ oat bran/ oligofructose/ pectin/ pumpkin/ psyllium/ rice bran/ wheat bran/ wheat dextrin/ bulking agent
Probiotic/ bacterium/ bacterial/ acidophilus/ microflora/ flora/ food bacterial/ Bifidobacterium/ Lactobacillus/ Lactococcus/ Saccharomyces/ Streptococcus
Prebiotic/ inulin/ lactulose/ galactooligosaccharide/ fructooligosaccharide/ mannooligosaccharide/ arabinogalactan/ xylooligosaccharide/ polydextrose/ tagatose
Anti-inflammatory/ anti-inflammatory/ fish oil/ bromelain/ Vitamin C/ Vitamin E/ L-glutathione/ bioflavonoid/ selenium/ resveratrol/ papain/ flax seed oil/ curcumin/ ginger/ alpha lipoic acid/ zinc/ quercetin/ tocopherol/ anti-oxidant/ antioxidant
Antibiotic/ anti-histamine/ anti-allergic/ enzyme/ anti-diarrheal
Improve/ enhance/ produce / consistent/ firm/ bulky
Stool/ feces/ fecal/ excreta/ excrement

5. Classification codes used for the search

One or more of the IPCs/CPCs classes listed below have been used while conducting the search:

IPC/CPC	DESCRIPTION
A61K 31/00	Medical or Veterinary Science; Hygiene; Preparations For Medical, Dental, Or Toilet Purposes; Medicinal preparations containing organic active ingredients
A61K 31/70	Medical or Veterinary Science; Hygiene; Preparations For Medical, Dental, Or Toilet Purposes; Medicinal preparations containing organic active ingredients; Carbohydrates; Sugars; Derivatives thereof;
A61K 31/702	Medical or Veterinary Science; Hygiene; Preparations For Medical, Dental, Or Toilet Purposes; Medicinal preparations containing organic active ingredients; Carbohydrates; Sugars; Derivatives thereof; Oligosaccharides, i.e. having three to five saccharide radicals attached to each other by glycosidic linkages;
A61K 35/00	Medical or Veterinary Science; Hygiene; Preparations For Medical, Dental, Or Toilet Purposes; Medicinal preparations containing materials or reaction products thereof with undetermined constitution;
A61K 35/66	Medical or Veterinary Science; Hygiene; Preparations For Medical, Dental, Or Toilet Purposes; Medicinal preparations containing materials or reaction products thereof with undetermined constitution; Microorganisms or materials therefrom
A61K 35/741	Medical or Veterinary Science; Hygiene; Preparations For Medical, Dental, Or Toilet Purposes; Medicinal preparations containing materials or reaction products thereof with undetermined constitution; Bacterial; Probiotics
A61K 35/744	Medical or Veterinary Science; Hygiene; Preparations For Medical, Dental, Or Toilet Purposes; Medicinal preparations containing materials or reaction products thereof with undetermined constitution; Bacterial; Lactic acid bacteria, e.g. enterococci, pediococci, lactococci, streptococci or leuconostocs
A23K	Foods Or Foodstuffs; Their Treatment, Not Covered By Other Classes; Feeding-Stuffs Specially Adapted For Animals; Methods Specially Adapted For Production Thereof
A23K 10/10	Foods Or Foodstuffs; Their Treatment, Not Covered By Other Classes;

	Feeding-Stuffs Specially Adapted For Animals; Methods Specially Adapted For Production Thereof ; Animal feeding-stuffs obtained by microbiological or biochemical processes (using chemicals or microorganisms for ensilaging of green fodder
A23K 50/40	Foods Or Foodstuffs; Their Treatment, Not Covered By Other Classes; Feeding-Stuffs Specially Adapted For Animals; Methods Specially Adapted For Production Thereof; Feeding-stuffs specially adapted for particular animals for carnivorous animals, e.g. cats or dogs;

6. Exemplary Key Strings

(Derwent Innovation Database)

Sr. No.	Key strings	No. of Hits
1	ALL=(((Method* or process* or procedure*) near5 (treat* or prevent* or cur* or allievat* or reduc* or decreas*) near5 (anal or (anal near2 (sac* or gland* or pouch*))) near5 (disease* or disorder* or infect* or inflammat*))) AND DP<=(20120504);	**91**
2	ALL=(((anal near2 (sac* or gland* or pouch*)) near5 (disease* or disorder* or infect* or inflammat*)) AND ((pet or animal* or cat or dog or canine or feline) near5 (feed or food* or diet* or nutritional) near5 (formulation* or composition* or mixture* or additive* or supplement*))) AND DP<=(20120504);	**3**
3	CTB=(((pet or animal* or cat or dog or canine or feline) near5 (feed or food* or diet* or nutritional) near5 (formulation* or composition* or mixture* or additive* or supplement*)) AND (probiotic or prebiotic) AND (fiber or fibre) AND ((anti near2 inflammat*) or antiinflammat* or (fish near2 oil) or bioflavonoid* or bromelain* or Vitamin* or glutathione or selenium or resveratrol or papain or (flax near2 seed near2 oil) or curcumin or ginger or (lipoic near2 acid) or zinc or quercetin)) AND DP<=(20120504);	**17**
4	CTB=((pet or animal* or cat or dog or canine or feline or mammal*) AND ((feed or food* or diet* or nutritional or supplement* or additive) near5 (formulation* or composition* or mixture* or combination*)) AND (Probiotic* or Bifidobacterium or Lactobacillus or Lactococcus or Saccharomyces or Streptococcus or ((Bifidobacterium or B*1) near3 (coagulans or animalis or bifidum or breve or infantis or lactis or longum)) or ((Lactobacillus or L*1) near3 (acidophilus or brevis or casei or gasseri or lacti or paracasei or johnsonii or plantarum or reuteri or rhamnosus)) or (Enterococcus near2 faecium) or (Saccharomyces near2 boulardii) or Prebiotic* or inulin or lactulose or (galacto* near2 oligosaccharide*1) or (galactooligosaccharide*1) or fructooligosaccharide*1 or (fructo* near2 oligosaccharide*1) or mannooligosaccharide*1 or (manno* near2 oligosaccharide*1) or arabinogalactan* or xylooligosaccharide*1 or (xylo* near2 oligosaccharide*1) or polydextrose* or tagatose*) AND (fiber* or fibre* or cellulose or pectin*1 or gum*1 or chitin or chitosan or glucan*1 or hemicellulose* or inulin*1 or oligofructose* or fructooligosaccharides*1 or (fructo* near2 oligosaccharide*1) or lignin or polydextrose or psyllium or (resistant near2 dextrin*1) or (dandelion near2 root) or (resistant near2 starch*1) or barley or (flax near2 seed*1) or (digestion near2 resist* near2 maltodextrin*1) or (beet near2 pulp) or (guar near2 gum*1) or methylcellulose or (pumpkin near2 (powder* or seed*)) or psyllium or ((rice	**389**

	or wheat or oat) near2 bran*) or (wheat near2 5dextrin)) AND ((anti near2 inflammat*) or antiinflammat* or (fish near2 oil) or bioflavonoid* or bromelain* or Vitamin* or glutathione or selenium or resveratrol or papain or (flax near2 seed near2 oil) or curcumin or ginger or (lipoic near2 acid) or zinc or quercetin)) AND DP<=(20120504);	
5	CTB=(((pet or animal* or cat or dog or canine or feline or mammal*) near5 (feed or food* or diet* or nutritional or supplement* or additive) near5 (formulation* or composition* or mixture* or combination*)) AND (Probiotic* or Bifidobacterium or Lactobacillus or Lactococcus or Saccharomyces or Streptococcus or ((Bifidobacterium or B*1) near3 (coagulans or animalis or bifidum or breve or infantis or lactis or longum)) or ((Lactobacillus or L*1) near3 (acidophilus or brevis or casei or gasseri or lacti or paracasei or johnsonii or plantarum or reuteri or rhamnosus)) or (Enterococcus near2 faecium) or (Saccharomyces near2 boulardii) or Prebiotic* or inulin or lactulose or (galacto* near2 oligosaccharide*1) or (galactooligosaccharide*1) or fructooligosaccharide*1 or (fructo* near2 oligosaccharide*1) or mannooligosaccharide*1 or (manno* near2 oligosaccharide*1) or arabinogalactan* or xylooligosaccharide*1 or (xylo* near2 oligosaccharide*1) or polydextrose* or tagatose* or ((anti near2 inflammat*) or antiinflammat* or (fish near2 oil) or bioflavonoid* or bromelain* or Vitamin* or glutathione or selenium or resveratrol or papain or (flax near2 seed near2 oil) or curcumin or ginger or (lipoic near2 acid) or zinc or quercetin)) AND (fiber* or fibre* or cellulose or pectin*1 or gum*1 or chitin or chitosan or glucan*1 or hemicellulose* or inulin*1 or oligofructose* or fructooligosaccharides*1 or (fructo* near2 oligosaccharide*1) or lignin or polydextrose or psyllium or (resistant near2 dextrin*1) or (dandelion near2 root) or (resistant near2 starch*1) or barley or (flax near2 seed*1) or (digestion near2 resist* near2 maltodextrin*1) or (beet near2 pulp) or (guar near2 gum*1) or methylcellulose or (pumpkin near2 (powder* or seed*)) or psyllium or ((rice or wheat or oat) near2 bran*) or (wheat near2 dextrin))) AND DP<=(20120504);	**551**
6	ALL=((pet or animal* or cat or dog or canine or feline or mammal*) AND (feed or food* or diet* or nutritional or supplement* or additive) AND (formulation* or composition* or mixture* or combination*) AND (((anal or (anal near2 (sac* or gland* or pouch*))) near5 (disease* or disorder* or infect* or inflammat*)) OR ((improv* or enhanc*) near2 (gastrointestin* or (gastro near2 intestin*)) near5 (health or condition*)) OR (produc* near5 (consistent or firm or bulky) near5 (stool* or feces or fecal or excreta))) AND (Probiotic* or Bifidobacterium or Lactobacillus or Lactococcus or Saccharomyces or Streptococcus or ((Bifidobacterium or B*1) near3 (coagulans or animalis or bifidum or breve or infantis or lactis or longum)) or ((Lactobacillus or L*1) near3 (acidophilus or brevis or casei or gasseri or lacti or paracasei or johnsonii or plantarum or reuteri or rhamnosus)) or	**280**

	(Enterococcus near2 faecium) or (Saccharomyces near2 boulardii) or Prebiotic* or inulin or lactulose or (galacto* near2 oligosaccharide*1) or (galactooligosaccharide*1) or fructooligosaccharide*1 or (fructo* near2 oligosaccharide*1) or mannooligosaccharide*1 or (manno* near2 oligosaccharide*1) or arabinogalactan* or xylooligosaccharide*1 or (xylo* near2 oligosaccharide*1) or polydextrose* or tagatose*) AND (fiber* or fibre* or cellulose or pectin*1 or gum*1 or chitin or chitosan or glucan*1 or hemicellulose* or inulin*1 or oligofructose* or fructooligosaccharides*1 or (fructo* near2 oligosaccharide*1) or lignin or polydextrose or psyllium or (resistant near2 dextrin*1) or (dandelion near2 root) or (resistant near2 starch*1) or barley or (flax near2 seed*1) or (digestion near2 resist* near2 maltodextrin*1) or (beet near2 pulp) or (guar near2 gum*1) or methylcellulose or (pumpkin near2 (powder* or seed*)) or psyllium or ((rice or wheat or oat) near2 bran*) or (wheat near2 dextrin)) AND ((anti near2 inflammat*) or antiinflammat* or (fish near2 oil) or bioflavonoid* or bromelain* or Vitamin* or glutathione or selenium or resveratrol or papain or (flax near2 seed near2 oil) or curcumin or ginger or (lipoic near2 acid) or zinc or quercetin)) AND DP<=(20120504);	
7	ALL=((pet or animal* or cat or dog or canine or feline or mammal*) AND ((feed or food* or diet* or nutritional or supplement* or additive) near5 (formulation* or composition* or mixture* or combination*)) AND (((anal or (anal near2 (sac* or gland* or pouch*))) near5 (disease* or disorder* or infect* or inflammat*)) OR ((improv* or enhanc*) near2 (gastrointestin* or (gastro near2 intestin*)) near5 (health or condition*)) OR (produc* near5 (consistent or firm or bulky) near5 (stool* or feces or fecal or excreta)))AND (Probiotic* or Bifidobacterium or Lactobacillus or Lactococcus or Saccharomyces or Streptococcus or ((Bifidobacterium or B*1) near3 (coagulans or animalis or bifidum or breve or infantis or lactis or longum)) or ((Lactobacillus or L*1) near3 (acidophilus or brevis or casei or gasseri or lacti or paracasei or johnsonii or plantarum or reuteri or rhamnosus)) or (Enterococcus near2 faecium) or (Saccharomyces near2 boulardii) or Prebiotic* or inulin or lactulose or (galacto* near2 oligosaccharide*1) or (galactooligosaccharide*1) or fructooligosaccharide*1 or (fructo* near2 oligosaccharide*1) or mannooligosaccharide*1 or (manno* near2 oligosaccharide*1) or arabinogalactan* or xylooligosaccharide*1 or (xylo* near2 oligosaccharide*1) or polydextrose* or tagatose* or ((anti near2 inflammat*) or antiinflammat* or (fish near2 oil) or bioflavonoid* or bromelain* or Vitamin* or glutathione or selenium or resveratrol or papain or (flax near2 seed near2 oil) or curcumin or ginger or (lipoic near2 acid) or zinc or quercetin)) AND (fiber* or fibre* or cellulose or pectin*1 or gum*1 or chitin or chitosan or glucan*1 or hemicellulose* or inulin*1 or oligofructose* or fructooligosaccharides*1 or (fructo* near2 oligosaccharide*1) or lignin or polydextrose or psyllium or (resistant near2 dextrin*1) or (dandelion near2	**553**

	root) or (resistant near2 starch*1) or barley or (flax near2 seed*1) or (digestion near2 resist* near2 maltodextrin*1) or (beet near2 pulp) or (guar near2 gum*1) or methylcellulose or (pumpkin near2 (powder* or seed*)) or psyllium or ((rice or wheat or oat) near2 bran*) or (wheat near2 dextrin))) AND DP<=(20120504);	
8	ALL=(((pet or animal* or cat or dog or canine or feline or mammal*) near2 (feed or food* or diet* or nutritional or supplement* or additive) near2 (formulation* or composition* or mixture* or combination*)) AND (Probiotic* or Bifidobacterium or Lactobacillus or Lactococcus or Saccharomyces or Streptococcus or ((Bifidobacterium or B*1) near3 (coagulans or animalis or bifidum or breve or infantis or lactis or longum)) or ((Lactobacillus or L*1) near3 (acidophilus or brevis or casei or gasseri or lacti or paracasei or johnsonii or plantarum or reuteri or rhamnosus)) or (Enterococcus near2 faecium) or (Saccharomyces near2 boulardii) or Prebiotic* or inulin or lactulose or (galacto* near2 oligosaccharide*1) or (galactooligosaccharide*1) or fructooligosaccharide*1 or (fructo* near2 oligosaccharide*1) or mannooligosaccharide*1 or (manno* near2 oligosaccharide*1) or arabinogalactan* or xylooligosaccharide*1 or (xylo* near2 oligosaccharide*1) or polydextrose* or tagatose*) AND (fiber* or fibre* or cellulose or pectin*1 or gum*1 or chitin or chitosan or glucan*1 or hemicellulose* or inulin*1 or oligofructose* or fructooligosaccharides*1 or (fructo* near2 oligosaccharide*1) or lignin or polydextrose or psyllium or (resistant near2 dextrin*1) or (dandelion near2 root) or (resistant near2 starch*1) or barley or (flax near2 seed*1) or (digestion near2 resist* near2 maltodextrin*1) or (beet near2 pulp) or (guar near2 gum*1) or methylcellulose or (pumpkin near2 (powder* or seed*)) or psyllium or ((rice or wheat or oat) near2 bran*) or (wheat near2 dextrin)) AND ((anti near2 inflammat*) or antiinflammat* or (fish near2 oil) or bioflavonoid* or bromelain* or Vitamin* or glutathione or selenium or resveratrol or papain or (flax near2 seed near2 oil) or curcumin or ginger or (lipoic near2 acid) or zinc or quercetin)) AND DP<=(20120504);	**1147**
9	CTB=(((feed or food* or diet* or nutritional or supplement* or additive) near2 (formulation* or composition* or mixture* or combination*)) AND (pet or animal* or cat or dog or canine or feline) AND (Probiotic* or Bifidobacterium or Lactobacillus or Lactococcus or Saccharomyces or Streptococcus or ((Bifidobacterium or B*1) near3 (coagulans or animalis or bifidum or breve or infantis or lactis or longum)) or ((Lactobacillus or L*1) near3 (acidophilus or brevis or casei or gasseri or lacti or paracasei or johnsonii or plantarum or reuteri or rhamnosus)) or (Enterococcus near2 faecium) or (Saccharomyces near2 boulardii) or Prebiotic* or inulin or lactulose or (galacto* near2 oligosaccharide*1) or (galactooligosaccharide*1) or fructooligosaccharide*1 or (fructo* near2 oligosaccharide*1) or mannooligosaccharide*1 or (manno* near2 oligosaccharide*1) or arabinogalactan* or xylooligosaccharide*1 or	**1189**

	(xylo* near2 oligosaccharide*1) or polydextrose* or tagatose* or ((anti near2 inflammat*) or antiinflammat* or (fish near2 oil) or bioflavonoid* or bromelain* or Vitamin* or glutathione or selenium or resveratrol or papain or (flax near2 seed near2 oil) or curcumin or ginger or (lipoic near2 acid) or zinc or quercetin)) AND (fiber* or fibre* or cellulose or pectin*1 or gum*1 or chitin or chitosan or glucan*1 or hemicellulose* or inulin*1 or oligofructose* or fructooligosaccharides*1 or (fructo* near2 oligosaccharide*1) or lignin or polydextrose or psyllium or (resistant near2 dextrin*1) or (dandelion near2 root) or (resistant near2 starch*1) or barley or (flax near2 seed*1) or (digestion near2 resist* near2 maltodextrin*1) or (beet near2 pulp) or (guar near2 gum*1) or methylcellulose or (pumpkin near2 (powder* or seed*)) or psyllium or ((rice or wheat or oat) near2 bran*) or (wheat near2 dextrin))) AND DP<=(20120504);	
10	ALL=((anal near2 (sac* or gland*) near5 (disease* or disorder* or impact* or inflammat* or infect* or abscess* or neoplas* or swell*)) AND (dog* or cat* or pet*1 or puppy or kitten)) AND PRD<=(20120504);	**55**
11	ALL=((pet OR dog OR cat OR animal) near2 (food OR diet*) near2 (supplement* OR composition* OR additive* OR preparation*) AND (probiotic OR prebiotic OR flora OR bacterium OR acidophilus) AND (fiber OR fibre OR cellulose OR pectin) AND ((anti near2 inflammatroy) OR bromelain OR quercetin)) AND DP<=(20120504);	**72**
12	ALL=((food OR diet*) near2 (supplement* OR composition* OR additive* OR preparation*) near5 (pet* OR dog* OR cat* OR animal*) AND (probiotic OR prebiotic OR flora OR bacterium OR acidophilus) AND (fiber OR fibre OR cellulose OR pectin OR lignin) AND ((anti near2 (inflammat* OR diarrahea*)) OR bromelain OR quercetin)) AND DP<=(20120504);	**142**
13	ALL=(((pet OR dog OR cat OR animal) near2 (food OR diet*) near2 (supplement* OR composition* OR additive* OR preparation*) near55 (fiber OR fibre OR cellulose OR pectin OR barley OR "flax seed" OR *dextrin OR "beet pulp" OR "guar gum" OR inulin OR arabinogalactan OR methylcellulose OR "oat bran" OR oligofructose OR pumpkin OR psyllium OR "rice bran" OR "wheat bran") near55 (probiotic OR prebiotic OR flora OR bacterium OR acidophilus OR bifidobacterium OR lactobacillus OR lactococcus OR saccharomyces OR streptococcus) near55 ((anti near2 inflammatroy) OR bromelain OR quercetin OR "fish oil" OR bioflavonoid OR (vitamin near2 (C OR E)) OR (L near2 glutathione) OR selenium OR resveratrol OR papain OR "flax seed oil" OR curcumin OR ginger OR "alpha lipoic acid" OR zinc))) AND AD<=(20120504);	**3**
14	ALL=(((pet OR dog OR cat OR animal) near2 (food OR diet*) near2 (supplement* OR composition* OR additive* OR preparation*) near55 (probiotic OR prebiotic OR flora OR bacterium OR acidophilus OR bifidobacterium OR lactobacillus OR lactococcus OR saccharomyces OR streptococcus) near55 (fiber OR fibre OR cellulose OR pectin OR barley OR	**5**

	"flax seed" OR *dextrin OR "beet pulp" OR "guar gum" OR inulin OR arabinogalactan OR methylcellulose OR "oat bran" OR oligofructose OR pumpkin OR psyllium OR "rice bran" OR "wheat bran") near55 ((anti near2 inflammatroy) OR bromelain OR quercetin OR "fish oil" OR bioflavonoid OR (vitamin near2 (C OR E)) OR (L near2 glutathione) OR selenium OR resveratrol OR papain OR "flax seed oil" OR curcumin OR ginger OR "alpha lipoic acid" OR zinc))) AND AD<=(20120504);	
15	ALL=(((pet OR dog OR cat OR animal) near2 (food OR diet*) near2 (supplement* OR composition* OR additive* OR preparation*) near55 (fiber OR fibre OR cellulose OR pectin OR barley OR "flax seed" OR *dextrin OR "beet pulp" OR "guar gum" OR inulin OR arabinogalactan OR methylcellulose OR "oat bran" OR oligofructose OR pumpkin OR psyllium OR "rice bran" OR "wheat bran") near55 ((anti near2 inflammatroy) OR bromelain OR quercetin OR "fish oil" OR bioflavonoid OR (vitamin near2 (C OR E)) OR (L near2 glutathione) OR selenium OR resveratrol OR papain OR "flax seed oil" OR curcumin OR ginger OR "alpha lipoic acid" OR zinc))) AND AD<=(20120504);	**58**
16	ALL=(((pet OR dog OR cat OR animal) near2 (food OR diet*) near2 (supplement* OR composition* OR additive* OR preparation*) near20 (fiber OR fibre OR cellulose OR pectin OR barley OR "flax seed" OR *dextrin OR "beet pulp" OR "guar gum" OR inulin OR arabinogalactan OR methylcellulose OR "oat bran" OR oligofructose OR pumpkin OR psyllium OR "rice bran" OR "wheat bran") AND (probiotic OR prebiotic OR flora OR bacterium OR acidophilus OR bifidobacterium OR lactobacillus OR lactococcus OR saccharomyces OR streptococcus) AND ((anti near2 inflammatroy) OR bromelain OR quercetin OR "fish oil" OR bioflavonoid OR (vitamin near2 (C OR E)) OR (L near2 glutathione) OR selenium OR resveratrol OR papain OR "flax seed oil" OR curcumin OR ginger OR "alpha lipoic acid" OR zinc))) AND DP<=(20120504);	**77**
17	ALL=((pet near2 (dog* OR cat* OR animal*)) near2 food AND (probiotic OR prebiotic OR flora OR bacterium OR acidophilus) AND (fiber OR fibre OR cellulose OR pectin OR lignin) AND ((anti near2 (inflammatroy OR diarrahea* OR antibiotic OR (anti near2 histamine))) OR bromelain OR quercetin)) AND DP<=(20120504);	**33**
18	ALL=((pet near2 (dog* OR cat* OR animal*)) near2 food near2 (supplement OR additive OR composition) AND (probiotic OR prebiotic OR antibiotic OR (anti near2 histamine)) AND (fiber OR fibre OR cellulose OR lignin) AND ((anti near2 inflammatory) OR (anti near2 diarrhea*))) AND DP<=(20120504);	**11**
19	(ALL=((pet OR dog* OR cat* OR animal*) near2 food near2 (supplement OR additive OR composition OR formulation)) AND DP<=(20120504) AND AIC=(A23K* OR A23L* OR A61K*)) AND (ALL=((probiotic OR prebiotic) AND (fiber OR fibre OR lignin OR cellulose) AND (anti near2 (inflammatory	**80**

	OR diarrhea*))));	
20	ALL=((feline OR canine) near2 food near2 (supplement OR additive OR composition OR formulation) AND (probiotic OR prebiotic OR (anti near2 (histamine OR biotic OR diarrhea*))) AND (fiber OR lignin OR cellulose OR fibre) AND (anti near2 inflammatory)) AND DP<=(20120504) AND AIC=(A23K* OR A23L* OR A61K*);	**2**

7. Databases used

Patent databases

- ❑ DERWENT INNOVATION
- ❑ QUESTEL ORBIT
- ❑ ESPACENET
- ❑ GOOGLE PATENTS
- ❑ USPTO
- ❑ WIPO

Non Patent Databases

- ❑ GOOGLE/ GOOGLE SCHOLAR
- ❑ SCIENCE DIRECT
- ❑ PUBMED
- ❑ ACS
- ❑ WILEY
- ❑ SPRINGER
- ❑ RSC
- ❑ RESEARCHGATE

8. Search Results

8A. Potentially Relevant Results

Result 1

Title	**Anal Gland Infection - Page 1**
Publication details	Pedigree Database
Publication date	06 - 07 March 2012
Author(s)	Boomboom, GinaBel, Barenfell
Link	http://www.pedigreedatabase.com/community.read?post=172822-anal-gland-infection

by boomboom on 06 March 2012 - 22:03

Perhaps someone can chime in with **what can be done to prevent chronic anal sac infections.**

My GSD Ahrtos who will turn two years old tomorrow (HAPPY BIRTHDAY BUDDY) has been having a ongoing problem for the past 3 months with **his sacs becoming infected**.

After expressing his sacs and finding blood in the fluid the vet puts him on cipro.

After the regiment of antibiotics is finished and the infection is cleared up he is fine for the next few weeks with the infection returning once again. Other than this issue he is a very healthy active dog.

Any suggestions for helping to prevent this would be greatly appreciated.

by GinaBel on 06 March 2012 - 23:03

Chronic anal gland issues can sometimes be related to food allergies. First before trying a food allergy trial, I would consider **trying to add in something to bulk up your dogs stool to help him express them himself during defecation.** Please talk to your vet **about adding in** canned **pumpkin or another high fiber supplement to the food**. You can ask your vet to show you how to express the glands yourself at home to keep them empty. If that does not work, consider a hypoallergenic diet trial. This would need to be done for at least 12 weeks to be certain. Is your vet flushing out the glands when they are infected? Flushing the gland and infusing an antibiotic directly into the gland is very helpful in ridding the infection. Hope this was helpful.

by Barenfell on 07 March 2012 - 00:03

I agree with the suggestions that have been offered...have the vet flush and infuse the anal gland with the antibiotic to treat it directly, rather than giving systemic antibiotics. You should have your vet check to see if a second infusion is needed within a week or so to make sure they are clear. You should **also consider give probiotics (lactobacillus and bifidobacterium strains) to restore the good bacteria** that's already been destroyed by the Cipro or you could be looking at SIBO down the road. The **friendly flora will also help keep the pathogenic bacteria in check, so less of them to infect the anal glands** in the first place. **Firm up the stools to properly empty anal sacs and you should see a marked improvement.** Good luck.

Result 2

Patent/ Publication No.	**US20100316769A1**
Title	**Dietary supplements containing probiotics**
Publication date	2010-12-16
Priority date	2006-03-29
Assignee/Applicant	Czarnecki-Maulden Gail; Filipi Ivan; Cavadini Chistoph
Family members	US20100316769A1 | AU2007245002A1 | AU2007245002B2 | BRPI0709852A2 | CA2646196A1 | CA2646196C | CN101410121A | CN101410121B | EP2004201A2 | EP2004201A4 | EP2004201B1 | ES2688934T3 | JP05264702B2 | JP2009531448A | MX2008011958A | PL2004201T3 | RU2008142749A | RU2428055C2 | US20170196915A1 | WO2007126990A2 | WO2007126990A3 | ZA200809259B

ABSTRACT

Dietary supplements comprising at least one probiotic and at least one of animal digest, dried brewers yeast, **vitamin C; vitamin E**, beta carotene, zinc proteinate, manganese proteinate, ferrous sulfate, copper proteinate, calcium iodate, and sodium selenite. The probiotics and other ingredients are present in the supplement in amounts sufficient to enhance the palatability of the probiotics and compositions containing the probiotics, enhance the immune system to augment the beneficial effects of the probiotics, or extend the life of the probiotics.

[CITED PORTION]

CLAIM

1. A **dietary supplement comprising** **at least one probiotic and at least one of** animal digest, dried brewers yeast, **vitamin C; vitamin E**, beta carotene, zinc proteinate, manganese proteinate, ferrous sulfate, copper proteinate, calcium iodate, and sodium selenite.

3. The supplement of claim 1 wherein the **probiotic comprises at least one of any suitable strain or subspecies of Enterococcus, Streptococcus, Lactobacillus, Lactococcus, Bifidobacterium, or Saccharomyces.**

6. The supplement of claim 1 **further comprising a prebiotic**.

7. The supplement of claim 1 **further comprising an anti-diarrhea agent**.

10. The dietary supplement of claim 1 wherein the **dietary supplement is formulated for a companion animal**.

11. The dietary supplement of claim 10 **wherein the companion animal is a cat or dog**.

DESCRIPTION

DETAILED DESCRIPTION OF THE INVENTION

[0034] In one aspect, the present invention provides **dietary supplements comprising at least one probiotic and at least one of** animal digest, dried brewers yeast, **vitamin C; vitamin E**, beta carotene, zinc proteinate, manganese proteinate, ferrous sulfate, copper proteinate, calcium iodate, and sodium selenite. In various embodiments, **the dietary supplements contain at least one probiotic and a plurality of** animal digest, dried brewers yeast, **vitamin C; vitamin E**, beta carotene, zinc proteinate, manganese proteinate, ferrous sulfate, copper proteinate, calcium iodate, and sodium selenite. In one embodiment, the dietary supplement comprises at least one probiotic and animal digest, dried brewers yeast, vitamin C; vitamin E, beta carotene, zinc proteinate, manganese proteinate, ferrous sulfate, copper proteinate, calcium iodate, and sodium selenite. The invention is based upon the discovery that various combinations of probiotics and the above ingredients enhance the palatability of the probiotics and compositions containing the probiotics, enhance the immune system to augment the beneficial effects of the probiotics, and/or extend the life of the probiotics.

[0035] The probiotics can be present in the dietary supplements as an ingredient or additive. The probiotics can be prokaryotes, eukaryotes, or archaebacteria. **Examples of suitable probiotics include yeasts such as Saccharomyces**, Debaromyces, Candida, Pichia and Torulopsis, moulds such as Aspergillus, Rhizopus, Mucor, and Penicillium and Torulopsis and **bacteria such as the genera Bifidobacterium**, Bacteroides, Clostridium, Fusobacterium, Melissococcus, Propionibacterium, Streptococcus, **Enterococcus**, **Lactococcus**, Staphylococcus, Peptostrepococcus, Bacillus, Pediococcus, Micrococcus,

Leuconostoc, Weissella, Aerococcus, Oenococcus and **Lactobacillus**. In preferred embodiments, the **probiotics comprise at least one of any suitable strain or subspecies of Enterococcu**s, Streptococcus, **Lactobacillus, Lactococcus, Bifidobacterium, or Saccharomyces**. **Enterococcus species include, without limitation, Enterococcus facecium**, specifically Enterococcus faecium strain SF68 (NCIMB 10415), as well as other Enterococci Streptococcus species including, without limitation, Streptococcus faecium, Streptococcus thermophilus, and Streptococcus salivarus. Lactobacillus species include, without limitation, Lactobacillus acidophilus, Lactobacillus acidophilus NCC2628 (CNCM I-2453), Lactobacillus acidophilus NCC2766, Lactobacillus acidophilus NCC2775, Lactobacillus brevis, Lactobacillus bulgaricus, Lactobacillus casei, Lactobacillus casei Imunitas, Lactobacillus casei Shirota, Lactobacillus cellobiosus, Lactobacillus crispatus, Lactobacillus curvatus, Lactobacillus delbrueckii, Lactobacillus fermentum, Lactobacillus gasseri, Lactobacillus helveticus, Lactobacillus johnsonii, Lactobacillus johnsonii NCC2774, Lactobacillus johnsonii NCC2767, Lactobacillus johnsonii NCC2822, Lactobacillus plantarum, Lactobacillus reuteri, Lactobacillus johnsonii LA1, Lactobacillus plantarum, Lactobacillus reuteri, Lactobacillus reuteri NCC2823, Lactobacillus reuteri NCC2581 (CNCM 1-2448), Lactobacillus reuteri NCC2592 (CNCM 1-2450), Lactobacillus reuteri NCC2603 (CNCM 1-2451), Lactobacillus reuteri NCC2613 (CNCM 1-2452), Lactobacillus rhamnosus Lactobacillus rhamnosus NCC2583 (CNCM 1-2449), Lactobacillus rhamnosus GG (ATCC 53103; Lactobacillus rhamnosus or Lactobacillus casei subspecies rhamnosus), Lactobacillus salivarius, Lactobacillus salivarius NCC2586, Lactobacillus paracasei ST11. Lactococcus species include, without limitation, Lactococcus lactis and Lactococcus plantarum. Bifidobacterium species include, without limitation, Bifidobacterium adolescentis, Bifidobacterium bifidum, Bifidobacterium animalis, Bifidobacterium thermophilum, Bifidobacterium breve, Bifidobacterium longum, Bifidobacterium pseudolongum, Bifidobacterium infantis, Bifidobacterium lactis, Bifidobacterium lactis Bb-12. Saccharomyces species include, without limitation, Saccharomyces boulardii (cerevisiae). In preferred embodiments, the dietary supplements comprise Enterococcus faecium (SF68).

[0039] **The dietary supplements can be prepared as a variety of formulations such as a powder, granule, pellet, or any other appropriate delivery form**. In preferred embodiments, the dietary supplement formulation is powder containing microencapsulated probiotics within a biopolymer matrix. The powder dietary supplement can be sprinkled over or otherwise applied to and admixed with a food or other composition, particularly a pet food such as dog food or cat food. The powder dietary supplements can be specially formulated for consumption by a particular animal, such as companion animal. In one embodiment, the powder dietary supplement comprises a high concentration of probiotics such that the

supplement can be administered to the animal in small amounts, or in the alternative, can be diluted before administration to an animal. A skilled practitioner can devise other routes of administration such as providing the dietary supplement alone or feeding it in, on, or with a pet treats.

[0042] **The dietary supplements of the invention can comprise additional substances such as minerals**, vitamins, salts, proteins, amino acids, **fibers**, condiments, colorants, and preservatives. **Non-limiting examples of minerals include** calcium, phosphorous, potassium, sodium, iron, chloride, boron, copper, **zinc**, magnesium, manganese, iodine, **selenium** and the like, and various salts thereof. Non-limiting examples of vitamins include vitamin A, various B vitamins, e.g., niacin, pantothenic acid, folic acid, biotin, vitamin D, and vitamin K. The dietary supplements may also comprise carotenoids such as alpha-carotene, lycopene, lutein, zeaxanthin and beta-cryptoxanthin. **Additional ingredients may also be included, for example, inulin**, amino acids, and the like. One particularly preferred amino acid is taurine.

[0043] **The dietary supplements of the invention can further comprise prebiotics**. **Prebiotics include any substance that alters microflora composition of the gastrointestinal tract by providing a substrate for growth of microorganisms. Prebiotics include, without limitation, natural and synthesized oligosaccharides, soluble fibers, resistant starch, and gums.** The oligosaccharides can be linear or branched. The prebiotic can be specifically chosen for its ability to enhance the survival of the probiotic in the storage container, or in the gastrointestinal tract of an animal. The prebiotic can also be specifically chosen for its ability to enhance the functionality of the probiotic in the animal or to complement the benefits of the probiotic. Generally, prebiotics are administered in amounts sufficient to positively stimulate the healthy microflora in the gut and cause these “good” bacteria to reproduce. Typical amounts are from about one to about 10 grams per serving or from about 5 percent to about 40 percent of the recommended daily dietary fiber for an animal.

[0046] **The dietary supplements may also further comprise at least one fiber source**. The dietary supplement may comprise from about 0.5% to about 5% fiber. **A variety of soluble or insoluble fibers may be utilized, as will be known to those of ordinary skill in the art. The fiber source can be beet pulp (from sugar beet), gum arabic, gum talha, psyllium, rice bran**, carob bean gum, citrus pulp, **pectin, fructooligosaccharide, mannanoligofructose**, soy fiber, fiber from lupins, **arabinogalactan**, galactooligosaccharide, arabinoxylan, **or mixtures thereof**. The fiber source can be a

fermentable fiber, as are many of those listed above. Fermentable fiber has previously been described to provide a benefit to the immune system of companion animals. **Fermentable fiber or other compositions known to those of skill in the art which provide a prebiotic composition that could enhance the growth of probiotics within the intestine may also be incorporated into the composition to aid in the enhancement of the benefits provided by the present invention to the** immune system **gastrointestinal system**, and general health **of an animal**.

Example 1 Probiotic Powder Blending Process

[0069] **Probiotic powder formulations for dogs and cats** were manufactured using standard dry mixing equipment, including a ribbon mixer, a v-mixer, or double-agitated paddle mixer. Mixing times were variable, depending on the mixer used. The maximal mixing time was 10 minutes. The sequence in which the ingredients of the probiotic composition were added to the mixer was not critical. The blended powder was immediately packaged into bulk bags protected with PVC shroud or into the PVC-lined bags. **The formulation prepared for cats is set forth in Table 1 and the formulation for dogs is set forth in Table 2.**

TABLE 1

Probiotic Powder Formulation for Cats

Ingredient	Unit	Amount
Carotenes	IU A/lb	446000
Crude Fiber	%	0.415
Fat	%	17.7
Calcium	ppm	3059
Copper	ppm	58.12
Iron	ppm	870.5
Magnesium	ppm	967.5
Manganese	ppm	284.8
Phosphorus	ppm	17690
Potassium	ppm	7476
Sodium	ppm	14760
Zinc	ppm	1144
Moisture	%	3.39
Protein	%	46.8
Selenium	ppm	2.16
Vitamin E	mg/100 g	1110
Vitamin C	ppm	8670
Taurine	ppm	6730
Enterococcus faecium	CFU/g	10^9

TABLE 2

Probiotic Powder Formulation for Dogs

Ingredient	Unit	Amount
Carotenes	IU A/lb	787000
Crude Fiber	%	0.560
Fat	%	17.6
Calcium	ppm	3721
Copper	ppm	123.5
Iron	ppm	1577
Magnesium	ppm	1001
Manganese	ppm	685.1
Phosphorus	ppm	18120
Potassium	ppm	7506
Sodium	ppm	17930
Zinc	ppm	1993
Moisture	%	3.39
Protein	%	44.7
Selenium	ppm	2.81
Vitamin E	mg/100 g	1410
Vitamin C	ppm	10700
Enterococcus faecium	CFU/g	10^9

[0067] In another aspect, the present invention provides a means for communicating information about or instructions for one or more of (1) **using the dietary supplement to administer probiotics to an animal, particularly to maintain or improve gastrointestinal health, (2) admixing the dietary supplement with the other components (food compositions) of the present invention, (3) administering the dietary supplement to an animal, alone or in combination with the other elements of the present invention, and (4) using the kits of the present invention to administer probiotics to an animal, particularly to maintain or improve gastrointestinal health or to promote the health or wellness of the animal, e.g.**, preventing and treating diarrhea or for **improving stool quality**. The means comprises a document, digital storage media, optical storage media, audio presentation, or visual display containing the information or instructions. In certain embodiments, the communication means is a displayed web site, visual display kiosk, brochure, product label, package insert, advertisement, handout, public announcement, audiotape, videotape, DVD, CD-ROM, computer readable chip, computer readable card, computer readable disk, computer memory, or combination thereof containing such information or instructions. Useful information includes one or more of (1) methods and techniques for combining and administering the dietary supplement and/or other components and (2) contact information for animals or their caregivers to use if they have a question about the invention and its use. Useful instructions include amounts for mixing and administration amounts and frequency. The communication means is useful for instructing on the benefits of using the present invention and communicating the approved methods for administering the invention to an animal.

Result 3

Patent/ Publication No.	**US7722905B2**
Title	Method to reduce odor of excreta from companion animals
Publication date	2010-05-25
Priority date	2004-11-24
Assignee	HILLS PET NUTRITION INC
Family members	US7722905B2 | AT418271T | AT537709T | AU2004294958A1 | AU2004294958B2 | AU2004294986A1 | AU2004294986B2 | BR200416877A | BR200416881A | CA2546283A1 | CA2546283C | CA2546286A1 | CA2546286C | CN103636926A | CN1886061A | CN1886061B | CN1972601A | DE602004018680D1 | DK1694136T3 | DK1694137T3 | EP1694136A2 | EP1694136B1 | EP1694137A2 | EP1694137B1 | ES2320138T3 | ES2378768T3 | JP05506138B2 | JP2007512022A | JP2007512029A | JP2012095661A | RU2006122525A | RU2006122529A | RU2357426C2 | RU2374897C2 | US20050112179A1 | US20050112217A1 | US20050112259A1 | US7687077B2 | WO2005053420A2 | WO2005053420A3 | WO2005053422A2 | WO2005053422A3 | WO2005053424A1 | ZA200604322B | ZA200604329B

ABSTRACT

A method is provided for reducing odor of excreta of a companion animal. **The method comprises causing the animal to ingest a composition comprising an excreta odor reducing effective amount of a zingiberaceous spice such as ginger** or an extract thereof, **or an excreta odor reducing effective amount of fiber together with another odor reducing agent**.

[CITED PORTION]

CLAIM

1. A method for reducing odor of stool of a companion animal, **the method comprising causing the animal to ingest a pet food composition comprising**

(i) a stool odor-reducing **effective amount of ginger** or an extract thereof;

(ii) **at least one fiber**;

(iii) a zinc salt:

(iv) about 5% to about 45% by weight carbohydrate;

(v) about 10% to about 60% by weight protein;

(vi) about 5% to about 40% by weight fat; and

(vii) about 0.1% to about 20% **total dietary fiber**, wherein said **amount of ginger** or extract thereof is about 0.005% to about 12% by weight and wherein said amount of at least one fiber is about 5% to about 20% by weight.

2. The method of claim 1, **wherein the animal is a cat**.

3. The method of claim 1, **wherein the animal is a dog**.

4. The method of claim 1, **wherein the composition further comprises one or more additional**, herbs, spices, extracts of herbs, extracts of spices, **minerals probiotics, enzymes** and proteins.

7. The method of claim 1, wherein the at **least one fiber is selected from the group consisting** of **cellulose**, hemicellulose, citrus pulp, **barley, bran**, banana, **oat fiber**, oat glucan, mannan-oligosaccharide, **pectin**, xvlooligosaccharide, burdock, **beet pulp, inulin, arabinogalactan and oligosaccharide**.

DESCRIPTION

DETAILED DESCRIPTION

[Column 2, Lines 34-44]

It has been found in accordance with this invention that **ginger** and extracts thereof can be surprisingly effective in reducing odor of excreta from an animal when included in the animal's diet. Without being held to a particular theory, it is believed that **the beneficial effects of the present invention result at least in part from antimicrobial, anti-inflammatory and gastric stimulation properties of ginger**. Specifically, it is believed that ginger reduces the level of odor producing compounds including heterocycles, phenols, thiols, sulfides and indoles present in excreta, and in this way reduces excreta odor including fecal, urinary and flatulence odor.

[Column 3, Lines 59-68 and Column 4, Lines 1-5]

In one embodiment of the invention, **the composition comprises ginger** or an extract thereof **in combination with fiber**. **Fibers are important food constituents that help modulate gut motility through various mechanisms such as water holding capacity, physical bulking, fuel for the gut bacteria, change in viscosity, etc**. **Examples of fibers include**, but are not limited to, **cellulose**, hemicellulose, citrus pulp, **barley, bran**, bananas, **oat fiber**, mannan-oligosaccharide, **pectin**, xylooligosaccharide, burdock, **beet pulp, inulin, arabinogalactan, oligosaccharides from gums**, galactose, other xylans, fructans, **dextrans**, **resistant starches**, etc. According to the present embodiment, fiber should be present at levels of about 0.1% to about 20%, for example about 1% to about 11%, of the total weight of the composition.

[Column 4, Lines 20-27]

In other embodiments, the composition of the fiber can include at least about 0.1% by weight, for example at least about 10%, at least about 20%, or at least about 60%, of the total fiber composition in the form of non-fermentable fiber. In certain embodiments, **the fiber comprises about 10% to about 80%, for example about 40% to about 60%, by weight of the total fiber composition in the form of fermentable fiber, with the balance being non-fermentable fiber**.

[Column 4, Lines 37-48]

Non-fermentable fibers include but are not limited to cellulose, **oat fiber**, hemicellulose and peanut hulls.

Moderately fermentable fibers include but are not limited to beet pulp, citrus pulp, resistant starches, some gums, galactooligosaccharides, mannan-oligosaccharide, burdock, rice bran, soy fiber, oat glucans, etc.

Highly fermentable fibers include but are not limited to gums, pectins and certain oligosaccharides such as xylooligosaccharides. Gums can include gums produced by microorganisms including but not limited to gellan and xanthan gums, and gums produced by plants such as acacia (gum arabic).

[Column 9, Lines 44-57 and Column 10, Lines 1-2]

Example 3

An experiment was conducted with twenty dogs fed diets including ginger, fiber or both. **The dogs were fed one of four different foods for two weeks**: control, control plus 0.5% ginger root powder, control plus a fiber blend and **control plus 0.5% ginger root**

powder and fiber blend powder. The 2.4% fiber blend was citrus pulp, barley, arabinogalactan and banana flakes. At the end of each two week period on each diet, stool was collected and analyzed to measure stool odor compounds. The stool odor compounds were extracted by putting a standard amount of stool in a glass container and incubating a solid phase microextraction fiber in the headspace. Volatiles bound to the fiber were desorbed and injected into a gas chromatography unit for separation into the various peaks. The peaks were then analyzed by mass spectrometry.

Result 4

Patent/ Publication No.	**US20070178078A1**
Title	Method for Modifying Gut Flora in Animals
Publication date	2007-08-02
Priority date	2005-12-29
Assignee	NA
Family members	US20070178078A1 | AT541469T | AU2006330421A1 | AU2006330421B2 | BRPI0620734A2 | CA2635038A1 | CN101351124A | CN101351124B | DK1978821T3 | EP1978821A1 | EP1978821B1 | EP1978821B2 | ES2379824T3 | JP2009522311A | RU2008131072A | RU2426451C2 | WO2007076534A1 | ZA200805413B

ABSTRACT

A method for enhancing the balance of beneficial and deleterious bacteria in the gastrointestinal tract of an animal having or at risk for inflammatory bowel disease (IBD) **by administering to the animal a composition comprising at least one antioxidant, optionally in conjunction with one or more of a probiotic and a prebiotic**.

[CITED PORTION]

CLAIM

1. **A method for enhancing the balance of beneficial and deleterious bacteria in the gastrointestinal tract of an animal having or at risk for inflammatory bowel disease (IBD) comprising administering to the animal a composition comprising at least one antioxidant**.

5. The method of claim 1 wherein the **enhancement is associated with reduction of inflammation**.

8. The method of claim 1 wherein the **antioxidant comprises one or more of vitamin E, vitamin C** and a carotenoid.

11. The method of claim 1 **further comprising administering to the animal at least one of a probiotic and a prebiotic**.

12. The method of claim 11 wherein a **probiotic is administered comprising beneficial bacteria comprising one or more of Bifidobacterium spp. and Lactobacillus spp.**

14. The method of claim 11 wherein a prebiotic is administered comprising one or more of an oligosaccharide, a galactan or a β-glucan.

15. **The method of claim 1 wherein the composition is a** food, **a supplement**, a snack, a treat, or an at least partially edible toy.

16. The method of claim 1 wherein the **composition is a food administered orally as a part of the diet of the animal**.

24. The method of claim 1 wherein the **animal is canine or feline**.

DESCRIPTION

SUMMARY OF INVENTION

[0015] In some embodiments, **the enhancement attributable to the method is associated with reduction of inflammation**.

[0016] Optionally, the **method further comprises administering to the animal at least one of a probiotic and a prebiotic**.

DETAILED DESCRIPTION

[0041] In some embodiments, **the composition to be administered comprises one or more of vitamin E, vitamin C** and a carotenoid.

[0058] **A probiotic is a preparation or composition comprising viable microbes, for example bacteria, molds or yeasts. Probiotics of interest herein comprise at least one kind of beneficial bacteria, for example bifidobacteria and/or lactic acid bacteria**. In one embodiment a **probiotic useful herein comprises beneficial bacteria comprising one or more of *Bifidobacterium* spp. and *Lactobacillus* spp. Suitable species include**, without limitation, ***Bifidobacterium* animalis** (including *B. animalis* subsp. lactis, sometimes referred to as *B. lactis*), ***Bifidobacterium longum*** (including *B. infantis*), *Bifidobacterium thermophilum,* ***Lactobacillus acidophilus, Lactobacillus animalis, Lactobacillus casei, Lactobacillus plantarum, Lactobacillus reuteri,* and *Lactobacillus rhamnosus***.

[0061] A prebiotic is a nondigestible substance that preferentially stimulates growth of beneficial bacteria. **Most prebiotics are fermentable carbohydrates: examples include oligosaccharides, galactans and β-glucans**, obtainable from various plant and microbial

sources**. Specific examples include arabinogalactan, fructooligosaccharide (FOS) and inulin**, a polysaccharide that yields FOS. The prebiotic can be administered separately from or in the same composition. e.g., a food composition, as the antioxidant.

Result 5

Patent/ Publication No.	**WO2011017040A1**
Title	NUTRITIONAL COMPOSITIONS COMPRISING FIBER AND PROBIOTICS
Publication date	2011-02-10
Priority date	2009-07-27
Assignee	NESTEC SA
Family members	WO2011017040A1 | AU2010281534A1 | AU2010281534B2 | BR112012001912A2 | CA2769323A1 | CA2769323C | CN102595935A | EP2459014A1 | IN201200713P1 | JP05873018B2 | JP2013500340A | MX2012001269A | RU2012106516A | SG177722A1 | US20120195868A1 | ZA201201407B

ABSTRACT

Nutritional compositions including fiber blends having a stable amount of probiotics and methods of making the nutritional compositions are provided. In a general embodiment, the present disclosure provides a **nutritional composition including a fiber blend** having agglomerated fiber particulates **and a probiotic**. The fiber blend can have a water activity of less than about 0.15. **The nutritional composition can be in an administerable form such as** pharmaceutical formulations, nutritional formulations, **dietary supplements**, functional foods and beverage products.

[CITED PORTION]

CLAIM

1. A **nutritional composition comprising**:

a fiber blend comprising agglomerated fiber particulates **and a probiotic**, the fiber blend having a water activity of less than about 0.2.

3. The nutritional composition of Claim 1, wherein the agglomerated fiber particulates comprise **a fiber selected from the group consisting of** fructooligosaccharides, **inulin**, galactooligosaccharides, partially hydrolyzed **guar gum**, galactomannans, acacia gum, pectins, **arabinogalactans**, beta-glucans, xanthan gum and **combinations thereof**.

6. The nutritional composition of Claim 1, wherein the **probiotic is selected from the group consisting of** Aerococcus, Aspergillus, Bacillus, Bacteroides, **Bifidobacterium,** Candida, Clostridium, Debaromyces, **Enterococcus**, Fusobacterium, **Lactobacillus, Lactococcus**, Leuconostoc, Melissococcus, Micrococcus, Mucor, Oenococcus, Pediococcus, Penicillium, Peptostrepococcus, Pichia, Propionibacterium, Pseudocatenulatum, Rhizopus, **Saccharomyce**s, Staphylococcus, Streptococcus, Torulopsis, Weissella, or a combination thereof.

7. The nutritional composition of Claim 1, wherein the **probiotic is selected from the group consisting of Lactobacillus reuteri, Lactobacillus rhamnoses, Lactobacillus plantarum and combinations thereof.**

8. The nutritional composition of Claim 1, wherein **the probiotic is Lactobacillus reuteri**.

10. The nutritional composition of Claim 1 **further comprising an ingredient selected from the group consisting of vitamins, minerals**, proteins, bioactives, **phytonutrients, antioxidants and combinations thereof**.

11. The nutrition composition of Claim 1, wherein **the nutritional composition is in an administerable form selected from the group consisting of** pharmaceutical formulations, nutritional formulations, **dietary supplements**, functional foods and beverage products.

DESCRIPTION

DETAILED DESCRIPTION

[0017] **Nutritional compositions including fiber blends having a stable amount of probiotics** and methods of making the fiber blends are provided. The fiber blends can be part of a nutritional composition or the nutritional composition by themselves. In a general embodiment, **the fiber blends include one or more fibers and one or more probiotics**. The fiber blends can have a reduced water activity. The fiber blends in embodiments of the present disclosure provide increased convenience for a customer by supplying an all-in-one fiber blend that has a probiotic that remains viable for a long period of time.

[0037] In an embodiment, the fiber blend further includes a metabolite generated by the probiotic during a fermentation process. For example, these metabolites may be released to the medium of fermentation or they may be stored within the microorganism. The metabolites can include part or many of the beneficial effects of a particular probiotic. **The nutritional**

composition can further include one or more ingredients such as vitamins, minerals, proteins, bioactives or a combination thereof.

[0038] **Non-limiting examples of vitamins include Vitamins** A, B-complex (such as B-I, B-2, B-6 and B- 12), **C**, D, **E** and K, niacin and acid vitamins such as pantothenic acid and folic acid and biotin. **Non- limiting examples of minerals include** calcium, iron, **zinc**, magnesium, iodine, copper, phosphorus, manganese, potassium, chromium, molybdenum, **selenium**, nickel, tin, silicon, vanadium and boron.

[0040] As used herein, non-limiting examples of **phytonutrients include those that are flavonoids** and allied phenolic and polyphenolic compounds, terpenoids such as carotenoids, and alkaloids; **including curcumin**, limonin, and **quercetin and combinations thereof.**

[0041] As used herein the term **"antioxidant" is preferably understood to include any one or more of various substances** (as beta-carotene (a vitamin A precursor), **vitamin C, vitamin E, and selenium**) that inhibit oxidation or reactions promoted by Reactive Oxygen Species (ROS) and other radical and non-radical species. Additionally, antioxidants are molecules capable of slowing or preventing the oxidation of other molecules. **Non-limiting examples of antioxidants include** carotenoids, coenzyme QlO ("CoQlO"), **flavonoids**, **glutathion**e Goji (Wolfberry), hesperidine, Lactowolfberry, lignan, lutein, lycopene, polyphenols, **selenium**, vitamin A, vitamin Bl, vitamin B6, vitamin B 12, **vitamin C**, vitamin D, **vitamin E, and combinations thereof**

Result 6

Patent/ Publication No.	**WO2008049437A1**
Title	COMPOSITION COMPRISING LIGNIN AND ANTIDIARRHEAL COMPONENT
Publication date	2008-05-02
Priority date	2006-10-26
Assignee	BIOFIBER-DAMINO A/S
Family members	WO2008049437A1

ABSTRACT

The present invention relates to a composition comprising lignin and at least one compound selected from the group consisting of bromelain, papain, tannin, carvacrol, thymol, alliin, allicin, fenugreek seed, egg, poppy, poppy seeds, humic acid, roots, kaolin, catechu, cellulase, **flavonoid** and isphagula husk. In particular it relates to the use of said composition as a food, feed, and/or food- or feed supplement. Additionally it relates to the method of preparing the composition.

[CITED PORTION]

CLAIM

1. **A composition comprising lignin and at least one compound selected from the group consisting of bromelain, papain**, tannin, carvacrol, thymol, alliin, allicin, fenugreek seed, egg, poppy, poppy seeds, humic acid, roots, kaolin, catechu, cellulase, **flavonoid** and **isphagula husk**.

3. The composition according to any of the claims 1-2 which **further comprises one or more components selected from the group of** amino acid, electrolyte, protein, fat, carbohydrate, thickener, emulsifier, filler, **vitamin**, preservative, **mineral,** colouring, and flavouring.

4. The composition according to any of the claims 1-3, wherein the **composition is an animal feed supplement.**

13. Use of the **composition** according to any of the claims 1-9 **as** food, **feed or supplement for** humans, pigs, cattle, sheep, goats, horses, chickens, turkeys, pigeons, camels, llamas, **dogs and cats**.

DESCRIPTION

DETAILED DESCRIPTION

[Page 6, Lines 22-27]

Without being bound to any theory the inventors of the present invention believes that a **composition comprising lignin in combination with at least one of the compounds selected from the group of bromelain, papain**, tannin, carvacrol, thymol, alliin, allicin, fenugreek seed, egg, poppy, poppy seeds, humic acid, roots, kaolin, catechu, cellulase, **flavonoid** and **isphagula husk has a beneficial effect on the gastrointestinal tract** and thus may alleviate diarrhoea.

[Page 14, Lines 36-38]

It is within the scope of the present invention **to use any subclass of flavonoids or combination of flavonoids**. It is furthermore within the scope of the present invention to use any source of flavonoids**.**

[Page 15, Lines 1-2]

In one embodiment the flavonoid of the present invention is a flavonol, such as quercetin, kaempferol, myricetin or isorhamnetin.

[Page 15, Lines 16-33]

Isphagula husk is a fibrous material which is also termed psyllium (husk) and is described in WO2004/043451 which is hereby incorporated for reference. The isphagula husk contained fibrous material comprised in the present composition may be the so-called mucopolysaccharide originating from Plantago ovata.

Since **isphagula husk is an intumescent, water absorbing agent** which seems to provide a non-specific binding between the mucopolysaccharides and the cell wall it is believed by the inventors **that psyllium fibres can be used successfully for the treatment of both diarrhoea and obstipation**.

In an aspect of the invention **the composition comprises lignin in combination with at least isphagula husk**.

[Page 16, Lines 2-5]

In an aspect of the invention the **composition may further comprise one or more components selected from the group of** amino acid, electrolyte, protein, fat, carbohydrate, peptide, thickener, emulsifier, filler, **vitamin**, preservative, **mineral**, colouring, and flavouring.

[Page 18, Lines 28-30]

The composition may comprise one or more vitamins. **Examples of suitable vitamins include but are not limited to** vitamin A, vitamin B, **vitamin C**, vitamin D and **vitamin E**, vitamin K.

[Page 19, Lines 7-9]

The composition may comprise one or more minerals. Suitable minerals include but are not limited to iron, copper, manganese and **zinc**. These minerals are often bound in complexes and reference to the minerals is intended to include such complexes.

8B. Additional Results

1. Diet and Large Intestinal Disease in Dogs and Cats
2. Ask a Vet: What type of dog food and supplements should I feed my dog for optimum health?
3. WO2006110407A1
4. US7608291B2
5. US20110171348A1
6. US20110104327A1
7. US20110212224A1
8. US20070243268A1

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