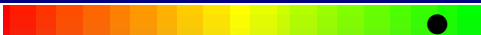




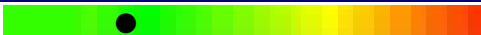








COMPLETE MICROBIOME MAPPING

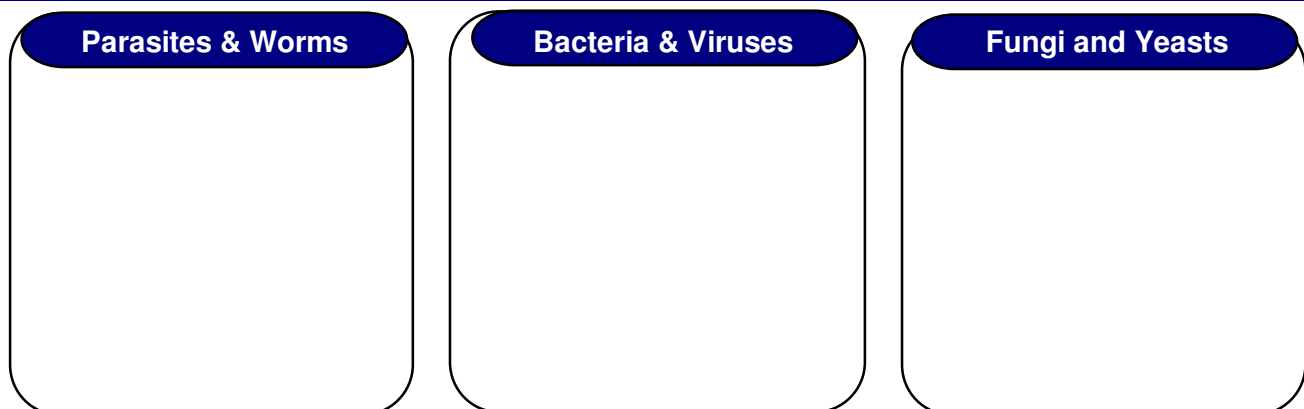
General Macroscopic Description

	Result	Markers
Stool Colour	Brown	Colour - Brown is the colour of normal stool. Other colours may indicate abnormal gut health.
Stool Form	Formed	Form - Sample form is categorised using the Bristol stool chart. A comment on stool appearance can be found in the comments section.
Mucous	Not Detected	Mucous - Mucous production may indicate the presence of an infection and/or inflammation.
Occult Blood	Negative	Blood (Macro) - The presence of blood in the stool may be the result of several causes besides colorectal bleeding, including hemorrhoids or gastrointestinal infection.

Short Chain Fatty Acids	Result	Range	Units	
Short Chain Fatty Acids, Beneficial	22.6	> 13.6	umol/g	
Butyrate	11.5	10.8 - 33.5	%	
Acetate	67.1	44.5 - 72.4	%	
Propionate	16.0	0.0 - 32.0	%	
Valerate	5.4	0.5 - 7.0	%	

GIT Functional Markers	Result	Range	Units	
Calprotectin.	<5.0	0.0 - 50.0	ug/g	
Pancreatic Elastase	>500.0	> 200.0	ug/g	
Secretory (slgA)	668.2	510.0 - 2010.0	ug/g	
Zonulin	89.0	0.0 - 107.0	ng/g	
Beta glucuronidase	2140.3	337.0 - 4433.0	U/g	
Steatocrit	<1.0	0.0 - 15.0	%	
a-Transglutaminase IgA	<20	0.0 - 100.0	units/L	

Microbiome Mapping Summary



Key Phyla Microbiota

Firmicutes:Bacteroidetes Ratio

0.23

< 1.00

RATIO



Relative Commensal Abundance of the 6 Phyla groups can be found on page 4 of this report





Parasites and Worms.

Parasitic Organisms

Parasites and Worms.	Result	Range	Units	
<i>Cryptosporidium</i> species	<dl	< 1.0	x10 ⁶ org/g	●
<i>Entamoeba histolytica</i> .	<dl	< 1.0	x10 ⁴ org/g	●
<i>Giardia intestinalis</i>	<dl	< 1.0	x10 ³ org/g	●
<i>Blastocystis hominis</i> .	<dl	< 1.0	x10 ³ org/g	●
<i>Dientamoeba fragilis</i> .	<dl	< 1.0	x10 ⁵ org/g	●
<i>Endolimax nana</i>	<dl	< 1.0	x10 ⁴ org/g	●
<i>Entamoeba coli</i> .	<dl	< 5.0	x10 ⁶ org/g	●
<i>Pentatrichomonas hominis</i>	<dl	< 1.0	x10 ² org/g	●

Worms

<i>Ascaris lumbricoides</i> , Roundworm	Not Detected	<i>Necator americanus</i> , Hookworm	Not Detected
<i>Trichuris trichiura</i> , Whipworm	Not Detected	<i>Enterobius vermicularis</i> , Pinworm	Not Detected
<i>Enterocytozoon</i> spp	Not Detected	<i>Hymenolepis</i> spp, Tapeworm	Not Detected
<i>Strongyloides</i> spp, Roundworm	Not Detected	<i>Taenia</i> species, Tapeworm	Not Detected

Comment: Not Detected results indicate the absence of detectable DNA in the sample for the worms reported.

NOTE: Reflex testing is performed on clinically indicated samples

Opportunistic Bacteria/Overgrowth

Opportunistic Bacteria/Overgrowth	Result	Range	Units	
<i>Bacillus</i> species.	<dl	< 1.00	x10 ⁵ CFU/g	●
<i>Enterococcus faecalis</i>	<dl	< 1.00	x10 ⁴ CFU/g	●
<i>Enterococcus faecium</i>	<dl	< 1.00	x10 ⁴ CFU/g	●
<i>Morganella</i> species	<dl	< 1.00	x10 ³ CFU/g	●
<i>Pseudomonas</i> species	<dl	< 1.00	x10 ⁴ CFU/g	●
<i>Pseudomonas aeruginosa</i> .	<dl	< 3.00	x10 ² CFU/g	●
<i>Staphylococcus</i> species	<dl	< 1.00	x10 ⁴ CFU/g	●
<i>Staphylococcus aureus</i>	<dl	< 5.00	x10 ² CFU/g	●
<i>Streptococcus</i> species	0.73	< 3.00	x10 ³ CFU/g	●
<i>Methanobrevibacter smithii</i>	<dl	< 3.50	x10 ⁹ CFU/g	●
<i>Desulfovibrio piger</i>	<dl	< 18.00	x10 ⁷ CFU/g	●
<i>Enterobacter</i> complex.	<dl	< 5.00	x10 ⁶ CFU/g	●

Potential Autoimmune Triggers

<i>Citrobacter</i> species.	<dl	< 5.00	x10 ⁵ CFU/g	●
<i>Citrobacter freundii</i> .	<dl	< 5.00	x10 ⁵ CFU/g	●
<i>Klebsiella</i> species	<dl	< 5.00	x10 ³ CFU/g	●
<i>Klebsiella pneumoniae</i> .	<dl	< 5.00	x10 ⁴ CFU/g	●
<i>Prevotella copri</i>	<dl	< 1.00	x10 ⁷ CFU/g	●
<i>Proteus</i> species	<dl	< 5.00	x10 ⁴ CFU/g	●
<i>Proteus mirabilis</i> .	<dl	< 1.00	x10 ³ CFU/g	●
<i>Fusobacterium</i> species	1.48	< 10.00	x10 ⁷ CFU/g	●

Fungi & Yeast

Fungi & Yeast	Result	Range	Units	
<i>Candida</i> species.	<dl	< 5.00	x10 ³ CFU/g	●
<i>Candida albicans</i> .	<dl	< 5.00	x10 ² CFU/g	●
<i>Geotrichum</i> species.	<dl	< 3.00	x10 ² CFU/g	●
<i>Saccharomyces cerevisiae</i> .	<dl	< 3.00	x10 ³ CFU/g	●
<i>Rhodotorula</i> species.	<dl	< 1.00	x10 ³ CFU/g	●



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Bacterial Pathogens	Result	Range	Units	
Aeromonas hydrophila.	<dl	< 1.00	x10 ³ CFU/g	
Campylobacter species.	<dl	< 1.00	x10 ³ CFU/g	
C. difficile, Toxin A	<dl	< 1.00	x10 ³ CFU/g	
C. difficile, Toxin B	<dl	< 1.00	x10 ³ CFU/g	
Enterohemorrhagic E. coli	<dl	< 1.00	x10 ³ CFU/g	
Enteroinvasive E. coli/Shigella	<dl	< 1.00	x10 ³ CFU/g	
Enterotoxigenic E. coli LT/ST	<dl	< 1.00	x10 ³ CFU/g	
Shiga-like Toxin E. coli stx1	<dl	< 1.00	x10 ³ CFU/g	
Shiga-like Toxin E. coli stx2	<dl	< 1.00	x10 ³ CFU/g	
Salmonella species.	<dl	< 1.00	x10 ⁴ CFU/g	
Vibrio species.	<dl	< 1.00	x10 ⁵ CFU/g	
Yersinia species.	<dl	< 1.00	x10 ⁵ CFU/g	
Helicobacter pylori	<dl	< 1.0	x10 ³ CFU/g	

Comment: Helico Pylori virulence factors will be listed below if detected POSITIVE

H.pylori Virulence Factor, babA	Not Detected	H.pylori Virulence Factor, cagA	Not Detected
H.pylori Virulence Factor, dupA	Not Detected	H.pylori Virulence Factor, iceA	Not Detected
H.pylori Virulence Factor, oipA	Not Detected	H.pylori Virulence Factor, vacA	Not Detected
H.pylori Virulence Factor, virB	Not Detected	H.pylori Virulence Factor, virD	Not Detected

Viral Pathogens	Result	Range	Units
Adenovirus 40/41	Not Detected		
Norovirus GI/II	Not Detected		
Rotavirus A	Not Detected		
Sapovirus (I,II,IV,V)	Not Detected		
Astrovirus (hAstro)	Not Detected		

Normal Bacterial GUT Flora	Result	Range	Units	
Bacteroides fragilis	1.1 *L	1.6 - 250.0	x10 ⁹ CFU/g	
Bifidobacterium species	16.1	> 6.7	x10 ⁷ CFU/g	
Bifidobacterium longum	14.7	> 5.2	x10 ⁶ CFU/g	
Enterococcus species	7.8	1.9 - 2000.0	x10 ⁵ CFU/g	
Escherichia species	1107.0	3.7 - 3800.0	x10 ⁶ CFU/g	
Lactobacillus species	448.8	8.6 - 6200.0	x10 ⁵ CFU/g	
Lactobacillus Rhamnosus	5.5 *L	8.3 - 885.0	x10 ⁴ CFU/g	
Clostridium species	11.0	5.0 - 50.0	x10 ⁶ CFU/g	
Oxalobacter formigenes	17.00	> 15.00	x10 ⁷ CFU/g	
Akkermansia muciniphila	<dl *L	1.00 - 50.00	x10 ³ CFU/g	
Faecalibacterium prausnitzii	154.5 *L	200.0 - 3500.0	x10 ³ CFU/g	

Methodology:

GIT Functional markers performed by GCMS,EIA,FEIA.







Bacteriology,Virology,Fungi,Parasites & Worms performed by PCR,qPCR.

<dl = result below detectable limit. *H = Result greater than the reference range. *L = Result less than the reference range

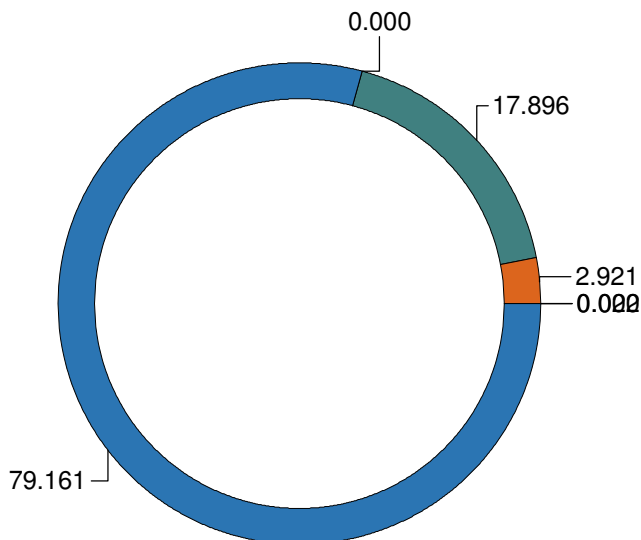


Introduction:

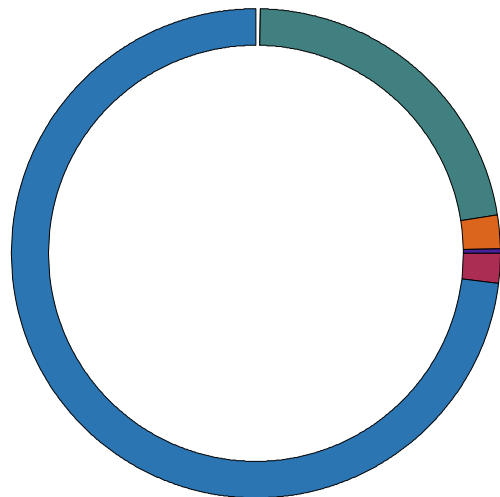
Your gut microbiome is a collective name for the 40 trillion cells and up to 1000 microbial species that include bacteria, viruses, fungi, parasites, and archaea and reside in our gut. The number of gut bacterial cells is approximately equal to the total number of human cells in our body, so if we consider only cell counts, we are only about half human. In terms of gene counts, the microbiome contains about 200 times more genes than the human genome, making bacterial genes responsible for over 99% of our body's gene content! Of all the microbial communities in the human body, the gut microbiome is by far the most dense, diverse, and physiologically important ecosystem to our overall health.

Relative Commensal Abundance	Result	Range	Units
 Bacteroidetes Phylum	79.161	50.000 - 95.000	%
 Firmicutes Phylum	17.896	3.500 - 40.000	%
 Proteobacteria Phylum	2.921	0.500 - 12.500	%
 Actinobacteria Phylum	0.022	0.001 - 4.818	%
 Verrucomicrobia Phylum	0.000	0.000 - 2.400	%
 Euryarchaeota Phylum	0.000	0.000 - 0.017	%

Your Phyla:



Healthy Phyla:



References:

NOTE: Relative abundance reference ranges have been based on a healthy population study.

King CH, et., al. (2019) Baseline human gut microbiota profile in healthy people and standard reporting template. PLoS One. 2019 Sep 11;14(9):e0206484.

Pathogen Summary:

Macroscopy Comment

BROWN coloured stool is considered normal in appearance.

Faecal Occult Blood Negative:

Faecal occult blood has not been detected in this specimen. If the test result is negative and clinical symptoms persist, additional follow-up testing using other clinical methods is recommended.

Metabolism Comment

In a healthy gut Short Chain Fatty Acids (SCFAs) exhibited in the following proportions; Butyrate, Acetate, Propionate (16%:60%:24%).

The primary SCFAs butyrate, propionate and acetate are produced by predominant commensal bacteria via fermentation of soluble dietary fibre and intestinal mucus glycans.

Key producers of SCFAs include *Faecalibacterium prausnitzii*, *Akkermansia muciniphila*, *Bacteroides fragilis*, *Bifidobacterium*, *Clostridium* and *Lactobacillus* Spp.

The SCFAs provide energy for intestinal cells and regulate the actions of specialised mucosal cells that produce anti-inflammatory and antimicrobial factors, mucins that constitute the mucus barriers, and gut active peptides that facilitate appetite regulation and euglycemia. Abnormal SCFAs may be associated with dysbiosis, intestinal barrier dysfunction and inflammatory conditions.

SCFA PRODUCTION TABLE

BACTERIA	BUTYRATE	PROPIONATE	ACETATE
<i>Akkermansia muciniphila</i>		▲▲▲	▲▲
<i>Anaerostipes caccae</i>	▲▲▲		
<i>Bacteroides</i> spp.		▲▲▲	
<i>Bifidobacterium</i> spp.		▲	▲▲▲
<i>Blautia obeum</i>		▲▲	▲▲▲
<i>Coprococcus eutactus</i>	▲		
<i>Escherichia coli</i>			▲
<i>Eubacterium rectale</i>	▲▲		
<i>Faecalibacterium prausnitzii</i>	▲▲▲		
<i>Lactobacillus</i> spp.	▲	▲	▲
<i>Roseburia homini</i>	▲▲		
<i>Ruminococcus bromii</i>	▲		▲
<i>Subdoligranulum variabile</i>	▲		

KEY

▲ Low Producers

▲▲ Moderate Producers

▲▲▲ High Producers

GIT Markers Comment

PANCREATIC ELASTASE: Normal exocrine pancreatic function.

Pancreatic Elastase reflects trypsin, chymotrypsin, amylase and lipase activity.

This test is not affected by supplements of pancreatic enzymes.

Healthy individuals should be producing >500 ug/g of PE-1 under normal/healthy conditions.

PE-1 levels between 200 - 500 ug/g may indicate suboptimal production.

PE-1 levels <200 ug/g indicate clear inadequate production.

The clinician should therefore consider digestive enzyme supplementation if one or more of the following conditions is present:

Loose watery stools, Undigested food in the stools, Post-prandial abdominal pain, Nausea or colicky abdominal pain, Gastroesophageal reflux symptoms, Bloating or food intolerance.

CALPROTECTIN Normal:

Faecal calprotectin values <50 ug/g are not indicative of inflammation in the gastrointestinal tract. Subjects with low faecal calprotectin levels normally do not need to be further investigated by invasive procedures. In patients with strong clinical indications



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STUDENT
PRACTITIONER 4000**

**STEPHANIE WINMILL
12-Apr-1991 Female**

**34 COTMAN WAY
PIMPAMA QLD 4209**

**LAB ID : 3896284
UR NO. : 6197869
Collection Date : 05-Jun-2023
Received Date: 07-Jun-2023**



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of intestinal inflammation, repeat testing may be useful.
Test performed by Phadia ELIA Fluorescence enzyme immunoassay (FEIA).

SECRETORY IGA NORMAL:

Secretory IgA is within range.

Secretory IgA represents the first line of defence of the gastrointestinal mucosa and is central to the normal function of the gastrointestinal tract as an immune barrier. Review this level with other pathogenic bacteria and normal commensal flora. Lower levels within reference range should be interpreted clinically.

ZONULIN HIGH NORMAL:

Zonulin is a protein that modulates intestinal barrier function and can also be considered as a potential inflammatory marker.

Although this result is within range, the result should be interpreted with patient clinical symptoms as well as reviewing the presence of other proteobacteria that may be the result of increased Zonulin.

BETA-GLUCURONIDASE NORMAL:

B-Glucuronidase is considered normal and is within reference range.

Opportunistic Bacteria Comment

METHANOBREVIBACTER SMITHII:

PHYLUM: Euryarchaeota

DESCRIPTION:

Methanobrevibacter smithii is a methane-producing microbe that plays an important role in the gut ecosystem by facilitating carbohydrate fermentation and production of short-chain fatty acids by commensal bacteria. Approximately 70% of the healthy cohort has below detectable levels of Methanobrevibacter smithii.



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Normal Bacterial Flora Comment

BACTEROIDES FRAGILIS LOW:

PHYLUM: Bacteroidetes

DESCRIPTION: Bacteroides fragilis is an anaerobic, Gram-negative bacterium. It is part of the normal microbiota of the human colon and is generally commensal. Bacteroides fragilis plays an intricate role in the human colon and usually has a beneficial relationship with the host. Low Bacteroides fragilis levels have been associated with inflammatory bowel disease and Crohn's.

TREATMENT SUGGESTIONS: Treatment may involve the use of probiotics and dietary modification.

BIFIDOBACTERIUM SPECIES LOW NORMAL:

PHYLUM: Actinobacteria

DESCRIPTION:

Bifidobacterium is a genus of gram-positive, nonmotile anaerobic bacteria that are ubiquitous inhabitants of the gastrointestinal tract and considered a probiotic. Bifidobacterium species prevent diarrhea and intestinal infections, alleviate constipation, and stimulate the immune system. Whilst, the Bifidobacterium species level is in range, it is below the average mean.

Lower levels may result from low fibre intake or reduced mucosal health. Additionally, Lower levels may be associated with irritable bowel syndrome or with pathogenic bacteria infection.

TREATMENT SUGGESTIONS: Treatment may involve the use of Bifidobacterium containing probiotics and treatment of any intestinal infections.

LACTOBACILLUS SPECIES LOW NORMAL:

PHYLUM: Firmicutes

DESCRIPTION:

Lactobacillus species is below average.

Lactobacillus is a genus of Gram-positive rod-shaped, non-spore-forming bacteria which constitute a significantly important component of the human gastrointestinal system.

Lactobacillus exhibits a mutualistic relationship with the human body, as it protects the host against potential invasions by pathogens, and in turn, the host provides a source of nutrients. Lactobacilli are among the most common probiotic found in food such as yogurt, and it is diverse in its application to maintain gut health and to help treat ailments clinically such as diarrhea and obesity.

Lactobacillus species promote the anti-inflammatory response, thereby supporting the improvement of symptoms pertaining to asthma, chronic obstructive pulmonary disease, neuroinflammatory diseases, cardiovascular diseases, inflammatory bowel disease (IBD) and chronic infections in patients. Reduced levels increase the risk of infections and inflammation. Studies have also revealed that chronic psychological stress and alcohol use may be associated with a decrease in Lactobacillus species, as well as antibiotic / medication use.

TREATMENT SUGGESTIONS: Treatment may involve the use of Lactobacillus containing probiotics and treatment of any intestinal infections.

LACTOBACILLUS RHAMNOSUS LOW:

PHYLUM: Firmicutes

DESCRIPTION:

Lactobacillus Rhamnosus is a Gram-positive anaerobic bacterium and is one of the most widely used probiotic strains, of which various health effects are well documented including the prevention and treatment of gastro-intestinal infections and diarrhea and even preventing certain allergic symptoms.

Decreased Lactobacillus rhamnosus colonisation has been shown to decrease gastro-intestinal health, increasing the risk of gastro-intestinal infections and diarrhea as well as extra-intestinal infections including oral and respiratory health. Studies have also revealed that chronic psychological stress and alcohol use may be associated with a decrease in Lactobacillus species, as well as antibiotic / medication use.

TREATMENT SUGGESTIONS: Treatment may involve the use of Lactobacillus containing probiotics and treatment of any intestinal



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infections.

AKKERMANSIA MUCINIPHILA LOW:

PHYLUM: Verrucomicrobia

DESCRIPTION:

Akkermansia muciniphila is a Gram-negative, strictly anaerobic, non-motile bacterium, often considered a human intestinal symbiont. There is growing evidence to suggest that the prevalence of this bacteria is associated with intestinal homeostasis, immunity, and a healthy gut. Decreased colonisation levels may be associated with obesity, type 2 diabetes, and inflammation.

TREATMENT SUGGESTIONS: Treatment may involve the use of probiotics, treatment of any intestinal infections and dietary modification.

FAECALIBACTERIUM PRAUSNITZII LOW:

PHYLUM: Firmicutes

DESCRIPTION:

Faecalibacterium prausnitzii is gram-positive, rod-shaped, anaerobic and is one of the most abundant and important commensal bacteria of the human gut microbiota. It is a key producer of Short Chain Fatty acids, has anti-inflammatory properties and may improve the imbalance in intestinal bacteria that leads to dysbiosis. Decreased colonisation of F. prausnitzii in the intestines have been associated with Crohn's disease, obesity, asthma, and major depressive disorders.

TREATMENT SUGGESTIONS: Treatment may involve the use of probiotics, treatment of any intestinal infections and dietary modification.



The Four “R” Treatment Protocol

REMOVE	Using a course of antimicrobial, antibacterial, antiviral or anti parasitic therapies in cases where organisms are present. It may also be necessary to remove offending foods, gluten, or medication that may be acting as antagonists. Consider testing IgG96 foods as a tool for removing offending foods.	ANTIMICROBIAL	Oil of oregano, berberine, caprylic acid
		ANTIBACTERIAL	Liquorice, zinc carnosine, mastic gum, tribulus, berberine, black walnut, caprylic acid, oil of oregano
		ANTIFUNGAL	Oil of oregano, caprylic acid, berberine, black walnut
		ANTIPARASITIC	Artemesia, black walnut, berberine, oil of oregano
		ANTIVIRAL	Cat's claw, berberine, echinacea, vitamin C, vitamin D3, zinc, reishi mushrooms
		BIOFILM	Oil of oregano, protease
REPLACE	In cases of maldigestion or malabsorption, it may be necessary to restore proper digestion by supplementing with digestive enzymes.	DIGESTIVE SUPPORT	Betaine hydrochloride, tilactase, amylase, lipase, protease, apple cider vinegar, herbal bitters
REINOCULATE	Recolonisation with healthy, beneficial bacteria. Supplementation with probiotics, along with the use of prebiotics helps re-establish the proper microbial balance.	PREBIOTICS	Slippery elm, pectin, larch arabinogalactans
		PROBIOTICS	Bifidobacterium animalis subsp lactis, lactobacillus acidophilus, lactobacillus plantarum, lactobacillus casei, bifidobacterium breve, bifidobacterium bifidum, bifidobacterium longum, lactobacillus salivarius subsp salivarius, lactobacillus paracasei, lactobacillus rhamnosus, Saccharomyces boulardii
REPAIR & REBALANCE	Restore the integrity of the gut mucosa by giving support to healthy mucosal cells, as well as immune support. Address whole body health and lifestyle factors so as to prevent future GI dysfunction.	INTESTINAL MUCOSA IMMUNE SUPPORT	Saccharomyces boulardii, lauric acid
		INTESTINAL BARRIER REPAIR	L-Glutamine, aloe vera, liquorice, marshmallow root, okra, quercetin, slippery elm, zinc carnosine, Saccharomyces boulardii, omega 3 essential fatty acids, B vitamins
		SUPPORT CONSIDERATION	Sleep, diet, exercise, and stress management