Text

NutriPATH
INTEGRATIVE PATHOLOGY SERVICES

P: 1300 688 522
E: info@nutripath.com.au

JIMI CLIFT
04-Feb-2021 Male

24 ACACIA STREET
TWEED HEADS SOUTH NSW 2486

-.SHELLEY EGGINS
ELLO HEALTH
ONLINE CLINIC 4225

LAB ID :	3918156
UR NO. :	6199191
Collection Date :	06-Sep-2023
Received Date:	08-Sep-2023

3918156

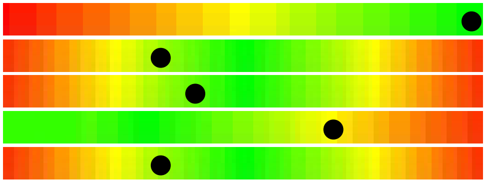
COMPLETE MICROBIOME MAPPING

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.

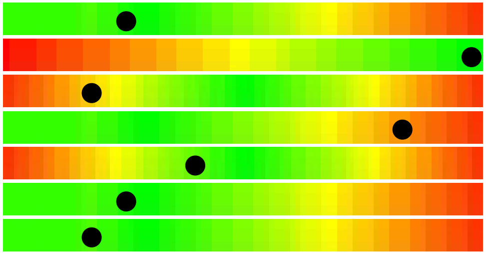
Short Chain Fatty Acids

Short Chain Fatty Acids	Result	Range	Units
Short Chain Fatty Acids, Beneficial	49.3	> 13.6	umol/g
Butyrate	15.6	10.8 - 33.5	%
Acetate	54.7	44.5 - 72.4	%
Propionate	27.5	0.0 - 32.0	%
Valerate	2.2	0.5 - 7.0	%



GIT Functional Markers

GIT Functional Markers	Result	Range	Units
Calprotectin.	7.5	0.0 - 50.0	ug/g
Pancreatic Elastase	>500.0	> 200.0	ug/g
Secretory (sIgA)	586.6	510.0 - 2040.0	ng/mL
Zonulin	*114.0* *H	0.0 - 107.0	ng/mL
Beta glucuronidase	2485.5	368.0 - 6266.0	U/g
Steatocrit	<1.0	0.0 - 15.0	%
a-Transglutaminase IgA	<20	0.0 - 100.0	units/L



Microbiome Mapping Summary

Parasites & Worms

Bacteria & Viruses

Fungi and Yeasts

Key Phyla Microbiota

	Result	Range	Units
Firmicutes:Bacteroidetes Ratio	0.59	< 1.00	RATIO

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

-.SHELLEY EGGINS
ELLO HEALTH
ONLINE CLINIC 4225

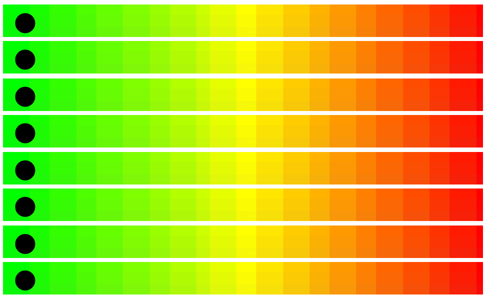
JIMI CLIFT
04-Feb-2021 Male

24 ACACIA STREET
TWEED HEADS SOUTH NSW 2486

LAB ID : 3918156
UR NO. : 6199191
Collection Date : 06-Sep-2023
Received Date: 08-Sep-2023

3918156

Parasites and Worms.	Result	Range	Units
Parasitic Organisms			
Cryptosporidium species	<dl	< 1.0	x10^5 org/g
Entamoeba histolytica.	<dl	< 1.0	x10^5 org/g
Giardia intestinalis	<dl	< 1.0	x10^5 org/g
Blastocystis hominis.	<dl	< 1.0	x10^5 org/g
Dientamoeba fragilis.	<dl	< 1.0	x10^5 org/g
Endolimax nana	<dl	< 1.0	x10^5 org/g
Entamoeba coli.	<dl	< 5.0	x10^5 org/g
Pentatrichomonas hominis	<dl	< 1.0	x10^5 org/g

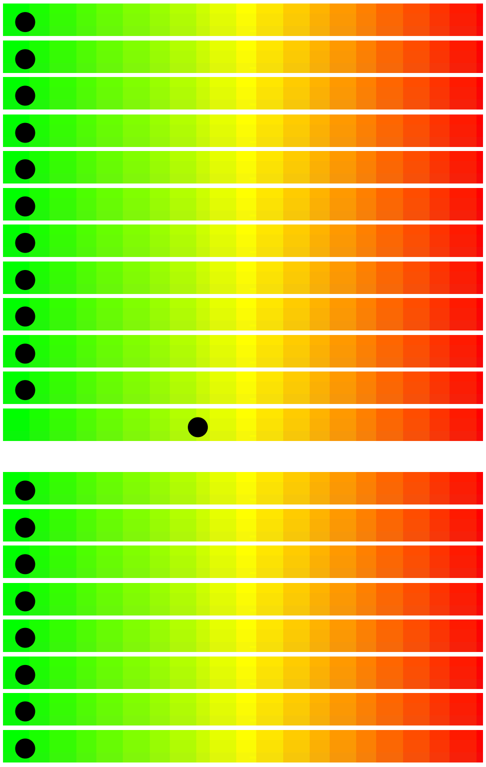


Worms

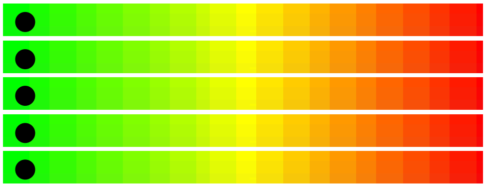
Ancylostoma duodenale, Roundworm	Not Detected		
Ascaris lumbricoides, Roundworm	Not Detected	Necator americanus, Hookworm	Not Detected
Trichuris trichiura, Whipworm	Not Detected	Enterobius vermicularis,Pinworm	Not Detected
Enterocytozoon spp	Not Detected	Hymenolepis spp, Tapeworm	Not Detected
Strongyloides spp, Roundworm	Not Detected	Taenia 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	Result	Range	Units
Bacillus species.	<dl	< 1.00	x10^4 CFU/g
Enterococcus faecalis	<dl	< 1.00	x10^5 CFU/g
Enterococcus faecium	<dl	< 1.00	x10^5 CFU/g
Morganella species	<dl	< 1.00	x10^5 CFU/g
Pseudomonas species	<dl	< 1.00	x10^4 CFU/g
Pseudomonas aeruginosa.	<dl	< 3.00	x10^4 CFU/g
Staphylococcus species	<dl	< 1.00	x10^3 CFU/g
Staphylococcus aureus	<dl	< 5.00	x10^3 CFU/g
Streptococcus species	1.19	< 3.00	x10^6 CFU/g
Methanobrevibacter smithii	<dl	< 3.50	x10^5 CFU/g
Desulfovibrio piger	<dl	< 18.00	x10^7 CFU/g
Enterobacter complex.	3.85	< 5.00	x10^5 CFU/g
Potential Autoimmune Triggers			
Citrobacter species.	<dl	< 5.00	x10^4 CFU/g
Citrobacter freundii.	<dl	< 5.00	x10^4 CFU/g
Klebsiella species	<dl	< 5.00	x10^3 CFU/g
Klebsiella pneumoniae.	<dl	< 5.00	x10^5 CFU/g
Prevotella copri	<dl	< 1.00	x10^9 CFU/g
Proteus species	<dl	< 5.00	x10^5 CFU/g
Proteus mirabilis.	<dl	< 1.00	x10^4 CFU/g
Fusobacterium species	<dl	< 10.00	x10^4 CFU/g



Fungi & Yeast	Result	Range	Units
Candida species.	<dl	< 5.00	x10^5 CFU/g
Candida albicans.	<dl	< 5.00	x10^4 CFU/g
Geotrichum species.	<dl	< 3.00	x10^2 CFU/g
Saccharomyces cerevisiae.	<dl	< 3.00	x10^3 CFU/g
Rhodotorula species.	<dl	< 1.00	x10^3 CFU/g



NutriPATH
INTEGRATIVE PATHOLOGY SERVICES
P: 1300 688 522
E: info@nutripath.com.au

JIMI CLIFT
04-Feb-2021 Male

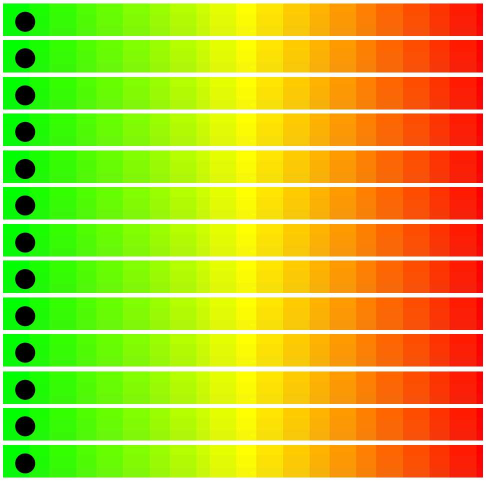
24 ACACIA STREET
TWEED HEADS SOUTH NSW 2486

-.SHELLEY EGGINS
ELLO HEALTH
ONLINE CLINIC 4225

LAB ID : 3918156
UR NO. : 6199191
Collection Date : 06-Sep-2023
Received Date: 08-Sep-2023

3918156

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

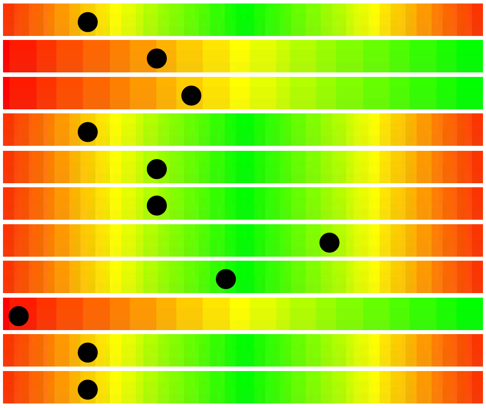


Comment: Helico Pylori virulence factors will be listed below if detected POSITIVE

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	1.6	1.6 - 250.0	x10^5 CFU/g
Bifidobacterium species	*3.9* *L	> 6.7	x10^5 CFU/g
Bifidobacterium longum	*3.5* *L	> 5.2	x10^5 CFU/g
Enterococcus species	27.7	1.9 - 2000.0	x10^3 CFU/g
Escherichia species	796.3	3.7 - 3800.0	x10^4 CFU/g
Lactobacillus species	1851.1	8.6 - 6200.0	x10^3 CFU/g
Lactobacillus Rhamnosus	723.7	8.3 - 885.0	x10^3 CFU/g
Clostridium species	26.1	5.0 - 50.0	x10^7 CFU/g
Oxalobacter formigenes	*<dl* *L	> 5.00	x10^6 CFU/g
Akkermansia muciniphila	*<dl* *L	1.00 - 50.00	x10^7 CFU/g
Faecalibacterium prausnitzii	224.7	200.0 - 3500.0	x10^6 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

P: 1300 688 522
E: info@nutripath.com.au

-.SHELLEY EGGINS
ELLO HEALTH
ONLINE CLINIC 4225

JIMI CLIFT
04-Feb-2021 Male

24 ACACIA STREET
TWEED HEADS SOUTH NSW 2486

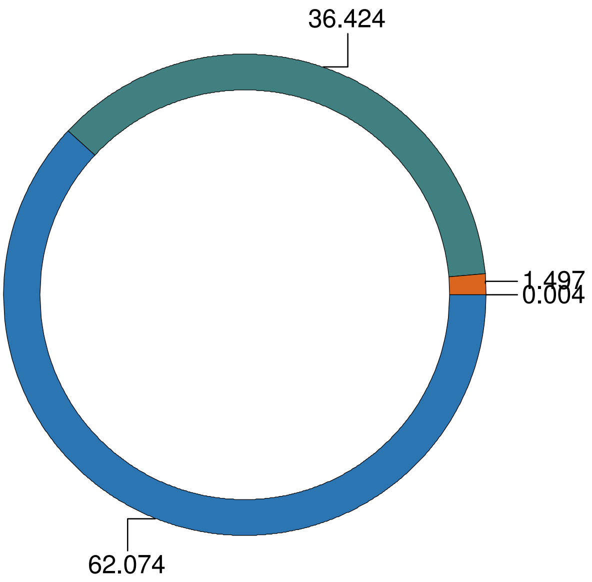
LAB ID :	**3918156**
UR NO. :	**6199191**
Collection Date :	**06-Sep-2023**
Received Date:	**08-Sep-2023**

3918156

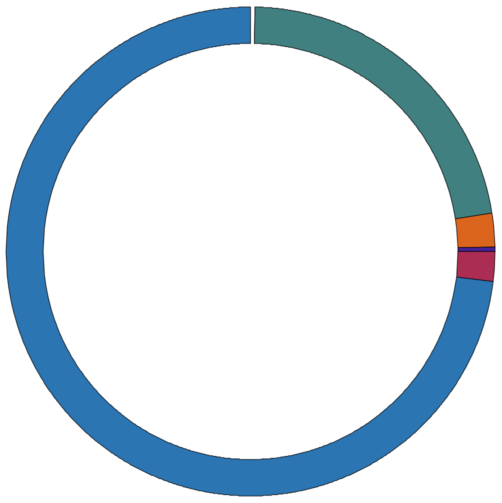
Introduction:
Your gut microbiome is a collective name for the 40 trillion cells and up to 1000 microbial species that include bacteria, viruses, fungi, parasites, and archaea and reside in our gut. The number of gut bacterial cells is approximately equal to the total number of human cells in our body, 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**	**62.074**	**50.000 - 95.000**	%
🟩	**Firmicutes Phylum**	**36.424**	**3.500 - 40.000**	%
🟧	**Proteobacteria Phylum** (Oxolabacter)	**1.497**	**0.500 - 12.500**	%
🟥	**Actinobacteria Phylum** (Bifido)	**0.004**	**0.001 - 4.818**	%
⬜	**Euryarchaeota Phylum**	**0.000**	**0.000 - 0.017**	%
🟪	**Verrucomicrobia Phylum** (Akkermansia)	**0.000**	**0.000 - 2.400**	%

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

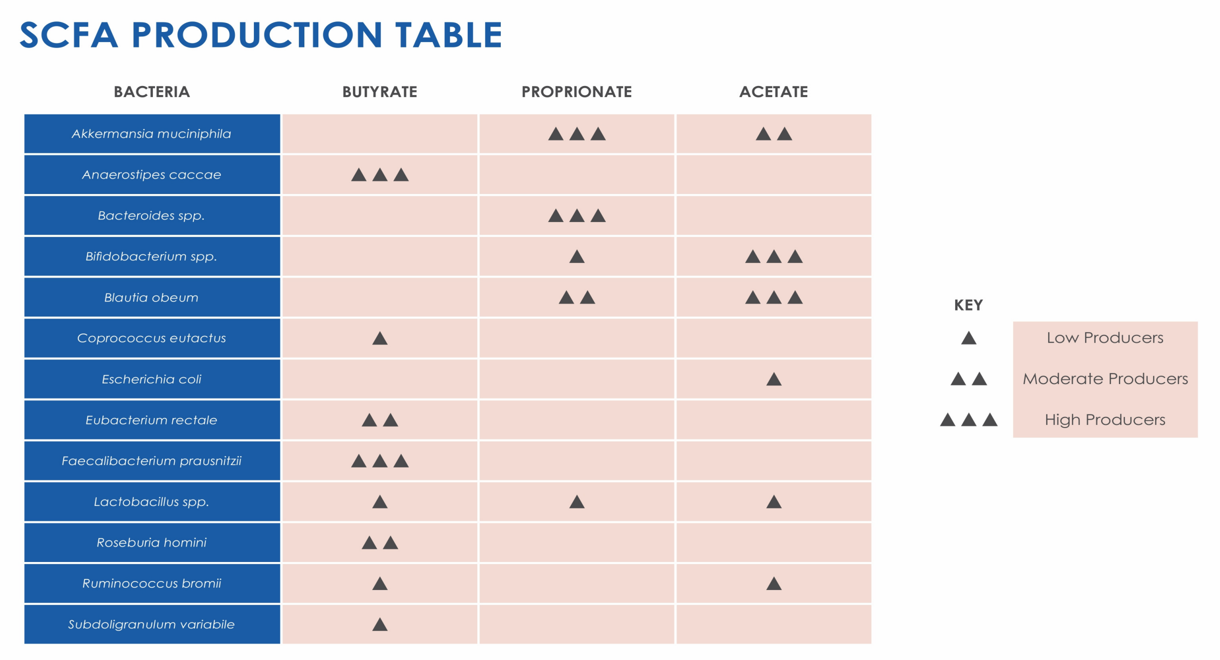
BROWN coloured stool is considered normal in appearance.

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 mucinphila, 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	PROPRIONATE	ACETATE
Akkermansia muciniphila		▲▲▲	▲▲
Anaerostipes caccae	▲▲▲		
Bacteroides spp.		▲▲▲	
Bifidobacterium spp.		▲	▲▲▲
Blautia obeum		▲▲	▲▲▲
Coprococcus eutactus	▲		
Escherichia coli			▲
Eubacterium rectale	▲▲		
Faecalibacterium prausnitzii	▲▲▲		
Lactobacillus spp.	▲	▲	▲
Roseburia homini	▲▲		
Ruminococcus bromii	▲		▲
Subdoligranulum variabile	▲		

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.

Testing performed by chemiluminescence immunosassay (CLIA).
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 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.

ELEVATED ZONULIN LEVELS:
Zonulin is a protein that modulates intestinal barrier function and can also be considered as a potential inflammatory marker. Review other markers in conjunction to this result such as faecal calprotectin.
Zonulin release facilitates the opening of tight junctions between the cells of the intestinal lining to allow for passage of nutrients and fluids into the body. However, Zonulin release can be "overstimulated" by certain external factors to cause excessive opening of tight junctions, leading to intestinal hyperpermeability or "leaky gut", inflammation, liver overload, nutrient deficiencies, rheumatoid arthritis and autoimmune disorders.
Identify the possible cause/s (Gut microorganism imbalance or the presence of dietary Gluten/gliadin) and remove to reduce further damage.

beta-GLUCORONIDASE 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.

Normal Bacterial Flora Comment

BIFIDOBACTERIUM SPECIES LOW:

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. Low levels may be associated with irritable bowel syndrome, asthma, autism, depressive disorder and with pathogenic bacterial infection.

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

BIFIDOBACTERIUM LONGUM LOW:

PHYLUM: Actinobacteria

DESCRIPTION:
Bifidobacterium longum is a Gram-positive, catalase-negative, rod-shaped bacterium present in the human gastrointestinal tract and one of the Bifidobacterium species. It can induce and regulate immune responses, reduce the expression of inflammatory cytokines, and maintain the normal intestinal barrier function.

Bifidobacterium longum is a clinically effective, well-established, multifunctional probiotic that has a long history of human use in alleviating gastrointestinal, immunological, and infectious diseases such as constipation, antibiotic associated diarrhoea, irritable bowel syndrome and ulcerative colitis. Low levels may be associated with irritable bowel syndrome, asthma, autism, depressive disorder and with pathogenic bacteria infection.

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

OXOLOBACTER FORMIGENES LOW:

PHYLUM: Proteobacterium

DESCRIPTION:
Oxalobacter formigenes is a Gram negative oxalate-degrading anaerobic bacterium. Oxolate is formed in the liver by amino acid catabolism as well as present in a wide range of foods including tea, coffee, chocolate and certain fruits and vegetables. High concentration of oxalate in the urine is related to the potential formation of calcium oxalate kidney stones. Oxolobacter Formigenes is the main known bacterial species involved in oxalate degradation in the gut and maintains oxalate homeostasis. Levels of O. Formigenes tends to decrease with age as well as with the use of antibiotics or other drugs. Low levels may be associated with calcium oxide stone formation, inflammatory bowel disease or Crohn's.

TREATMENT SUGGESTIONS:
Treatment options include probiotic treatment and low oxalate diet modification. Urinary oxalate levels may also need to be investigated.

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.

NutriPATH
INTEGRATIVE PATHOLOGY SERVICES
P: 1300 688 522
E: info@nutripath.com.au

-.SHELLEY EGGINS
ELLO HEALTH
ONLINE CLINIC 4225

JIMI CLIFT
04-Feb-2021 Male

24 ACACIA STREET
TWEED HEADS SOUTH NSW 2486

LAB ID :	**3918156**
UR NO. :	**6199191**
Collection Date :	**06-Sep-2023**
Received Date:	**08-Sep-2023**

3918156

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 sup lactise, lactobacillus acidophilus, lactobacillus plantarum, lactobacillus casei, bifidobacterium breve, bifidobacterium bifidum, bifidobacterium longum, lactobacillus salivarius ssp salivarius, lactobacillus paracasei, lactobacillus rhamnosus, Saccaromyces 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	Saccaromyces boulardii, lauric acid
		INTESTINAL BARRIER REPAIR	L-Glutamine, aloe vera, liquorice, marshmallow root, okra, quercetin, slippery elm, zinc carnosine, Saccaromyces boulardii, omega 3 essential fatty acids, B vitamins
		SUPPORT CONSIDERATION	Sleep, diet, exercise, and stress management