SAMPLE REPORT
DD-MM-YYYY

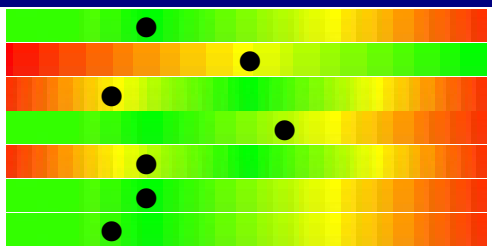
LAB ID : 000000000
UR NO. : 000000000
Collection Date : DD-MM-YYYY
Received Date: DD-MM-YYYY

COMPLETE MICROBIOME MAPPING

General Macroscopic Description

	Result	Range	Markers
Stool Colour	Brown		**Colour** - Brown is the colour of normal stool. Other colours may indicate abnormal GIT conditions.
Stool Form	Unformed		**Form** -A formed stool is considered normal. Variations to this may indicate abnormal GIT conditions.
Mucous	NEG	< +	**Mucous** - Mucous production may indcate the presence of an infection, inflammation or malignancy.
Occult Blood	NEG	< +	**Blood (Macro)**- The presence of blood in the stool may indicate possible GIT ulcer, and must always be investigated immediately.

GIT Functional Markers	Result	Range	Units
Calprotectin.	4.6	0.0 - 50.0	ug/g
Pancreatic Elastase	202.0	> 200.0	ug/g
Faecal Secretory IgA	*414.0* *L	510.0 - 2010.0	ug/g
Faecal Zonulin	65.0	0.0 - 107.0	ng/g
Faecal B-Glucuronidase	792.0	337.0 - 4433.0	U/g
Steatocrit	<1.0	0.0 - 15.0	%
anti-Gliadin IgA	<20	0.0 - 100.0	units/L



Microbiome Mapping Summary

Parasites & Worms

Bacteria & Viruses

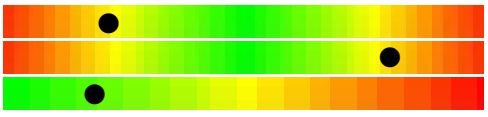
Bacillus species.
Pseudomonas species
Citrobacter freundii.
Streptococcus species
Methanobacteriaceae

Fungi and Yeasts

Candida species.

Key Phyla Microbiota

Bacteroidetes	9.30	8.61 - 33.10	x10^11 org/g
Firmicutes	29.70	5.70 - 30.40	x10^10 org/g
Firmicutes:Bacteroidetes Ratio	0.31	< 1.00	RATIO



SAMPLE REPORT
DD-MM-YYY Female

LAB ID : 000000000
UR NO. : 000000000
Collection Date : DD-MM-YYYY
Received Date: DD-MM-YYYY

LAB ID:00000000

Parasites and Worms.	Result	Range	Units
Parasitic Organisms			
Cryptosporidium.	<dl	< 1.0	x10^6 org/g
Entamoeba histolytica.	<dl	< 1.0	x10^4 org/g
Giardia lamblia.	<dl	< 5.0	x10^3 org/g
Blastocystis hominis.	<dl	< 2.0	x10^3 org/g
Dientamoeba fragilis.	<dl	< 1.0	x10^5 org/g
Endolimax nana	<dl	< 1.0	x10^4 org/g
Entamoeba coli.	<dl	< 5.0	x10^6 org/g
Pentatrichomonas hominis	<dl	< 1.0	x10^2 org/g
Worms			
Ancylostoma duodenale, Roundworm	Not Detected		
Ascaris lumbricoides, Roundworm	Not Detected		
Necator americanus, Hookworm	Not Detected		
Trichuris trichiura, Whipworm	Not Detected		
Taenia species, Tapeworm	Not Detected		
Enterobius vermicularis,Pinworm	Not Detected		

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

Opportunistic Bacteria/Overgr	Result	Range	Units
Bacillus species.	*6.4* *H	< 1.5	x10^5 org/g
Enterococcus faecalis	0.8	< 1.0	x10^4 org/g
Enterococcus faecium	0.4	< 1.0	x10^4 org/g
Morganella species	<dl	< 1.0	x10^3 org/g
Pseudomonas species	*18.1* *H	< 1.0	x10^4 org/g
Pseudomonas aeruginosa.	<dl	< 5.0	x10^2 org/g
Staphylococcus species	<dl	< 1.0	x10^4 org/g
Staphylococcus aureus	<dl	< 5.0	x10^2 org/g
Streptococcus species	7.0 *H	< 1.0	x10^3 org/g
Methanobacteriaceae	6.80 *H	< 5.00	x10^9 org/g
Desulfovibrio piger	<dl	0.0 - 18.0	x10^7 org/g
Oxalobacter formigenes	355.9	> 15.0	x10^7 org/g
Potential Autoimmune Triggers			
Citrobacter species.	<dl	< 5.0	x10^5 org/g
Citrobacter freundii.	*50.8* *H	< 5.0	x10^5 org/g
Klebsiella species	<dl	< 5.0	x10^3 org/g
Klebsiella pneumoniae.	4.5	< 5.0	x10^4 org/g
Prevotella copri	<dl	< 1.0	x10^7 org/g
Proteus species	<dl	< 5.0	x10^4 org/g
Proteus mirabilis.	<dl	< 1.0	x10^3 org/g
Fusobacterium species	0.20	< 10.00	x10^7 org/g

Fungi & Yeast	Result	Range	Units
Candida species.	*41.7* *H	< 5.0	x10^3 org/g
Candida albicans.	<dl	< 5.0	x10^2 org/g
Geotrichum species.	<dl	< 3.0	x10^2 org/g
Microsporidium species	<dl	< 5.0	x10^3 org/g
Rhodotorula species.	<dl	< 1.0	x10^3 org/g

SAMPLE REPORT
DD-MM-YYYY Female

LAB ID : 000000000
UR NO. : 000000000
Collection Date : DD-MM-YYYY
Received Date: DD-MM-YYYY

LAB ID:00000000

Bacterial Pathogens	Result	Range	Units
Aeromonas species.	<dl	< 1.0	x10^3 CFU/g
Campylobacter.	<dl	< 1.0	x10^3 CFU/g
C. difficile, Toxin A	<dl	< 1.0	x10^3 CFU/g
C. difficile, Toxin B	<dl	< 1.0	x10^3 CFU/g
Enterohemorrhagic E. coli	<dl	< 1.0	x10^3 CFU/g
E. coli O157	<dl	< 1.0	x10^2 CFU/g
Enteroinvasive E. coli/Shigella	<dl	< 1.0	x10^3 CFU/g
Enterotoxigenic E. coli LT/ST	<dl	< 1.0	x10^3 CFU/g
Shiga-like Toxin E. coli stx1	<dl	< 1.0	x10^3 CFU/g
Shiga-like Toxin E. coli stx2	<dl	< 1.0	x10^3 CFU/g
Salmonella.	<dl	< 1.0	x10^4 CFU/g
Vibrio cholerae	<dl	< 1.0	x10^5 CFU/g
Yersinia enterocolitica.	<dl	< 1.0	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	<dl	< 1.0	x10^10 CFU/g
Norovirus GI/II	<dl	< 1.0	x10^7 CFU/g
Bocavirus	<dl	< 1.0	x10^10 CFU/g

Normal Bacterial GUT Flora	Result	Range	Units
Bacteroides fragilis	7.0	1.6 - 250.0	x10^9 CFU/g
Bifidobacterium species	8.4	> 6.7	x10^7 CFU/g
Bifidobacterium longum	*3.6* *L	> 5.2	x10^6 CFU/g
Enterococcus species	28.1	1.9 - 2000.0	x10^5 CFU/g
Escherichia species	*3901.0* *H	3.7 - 3800.0	x10^6 CFU/g
Lactobacillus species	318.9	8.6 - 6200.0	x10^5 CFU/g
Lactobacillus Rhamnosus	*6.0* *L	8.3 - 885.0	x10^4 CFU/g
Clostridium species	48.2	5.0 - 50.0	x10^6 CFU/g
Enterobacter species	1.0	1.0 - 50.0	x10^6 CFU/g
Akkermansia muciniphila	33.11	0.01 - 50.00	x10^3 CFU/g
Faecalibacterium prausnitzii	1853.0	1.0 - 500000	x10^3 CFU/g

Short Chain Fatty Acids	Result	Range	Units
Short Chain Fatty Acids, Beneficial	34.0	> 13.6	umol/g
Butyrate	22.4	10.8 - 33.5	%
Acetate	61.5	44.5 - 72.4	%
Propionate	12.8	0.0 - 32.0	%
Valerate	3.3	0.5 - 7.0	%

SAMPLE REPORT
DD-MM-YYYY Female

LAB ID : 000000000
UR NO. : 000000000
Collection Date : DD-MM-YYYY
Received Date: DD-MM-YYYY

LAB ID:00000000

Pathogen Summary:

Macroscopy Comment

BROWN coloured stool is considered normal in appearance.

UNFORMED/LIQUID stools may indicate the presence of infection and/or inflammation.
Consider dysbiosis, food sensitivity, high dose vitamin C and magnesium, infection, intestinal permeability, laxative use, malabsorption, maldigestion, stress. Other causes: bacterial, fungal, viral and other parasitic infections.
Treatment:
• Investigate and treat possible underlying cause.
• Assess other gut markers (e.g pH, pancreatic elastase 1, etc).

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.

LAB ID : 000000000
UR NO. : 000000000
Collection Date : DD-MM-YYYY
Received Date: DD-MM-YYYY

LAB ID:00000000

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 produce on average 500 ug/g of PE-1. Thus, levels below 500 ug/g and above 200 ug/g suggest a deviation from optimal pancreatic function.
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 of intestinal inflammation, repeat testing may be useful.
Test performed by Phadia EliA Fluorescence enzyme immunoassay (FEIA).

LOW SECRETORY IGA:
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.

Secretory IgA binds to invading microorganisms and toxins and entrap them in the mucus layer or within the epithelial cells, so inhibiting microbial motility, agglutinating the organisms, and neutralising their exotoxins and then assist in their harmless elimination from the body in the faecal flow. sIgA also 'tags' food as acceptable, so low sIgA leads to increased sensitivity to foods. Several studies link stress and emotionality with levels of sIgA. Production is adversely affected by stress, which is mediated by cortisol levels.
Often low levels of Secretory IgA correlates with low beneficial flora levels and an increase in pathogenic and parasitic organism being present.

Treatment: Investigate the root cause and rule out parasitic organisms or pathogenic bacteria. Consider the use of probiotics (saccharomyces boulardii), choline, essential fatty acids, glutathione, glycine, glutamine, phosphatidylcholine, Vitamin C and Zinc which are all required for efficient production of Secretory IgA.

PLEASE NOTE: A low Secretory IgA should be reviewed in conjunction with the stool formation. An artefactually low level may be due to fluid dilution effects in a watery or unformed/loose stool sample.

LAB ID : 000000000
UR NO. : 000000000
Collection Date : DD-MM-YYYY
Received Date: DD-MM-YYYY

LAB ID:00000000

Opportunistic Bacteria Comment

ELEVATED BACILLUS SPECIES LEVEL:
Bacillus species are spore forming, gram-positive rods belonging to the Bacillaceae family. There are currently 50 valid species within the genus.
It has been noted that some strains are used as probiotics.
Sources:
Meat dishes are a common source of infection in other species of Bacillus such as B. subtilis and B. licheniformis.
B. cereus food poisoning includes meats, pasta, vegetable dishes, desserts, cakes, sauces and milk.

Pathogenicity:
As yet, no toxins or other virulence factors have been identified in association with the symptoms that accompany non-B. cereus species.

Symptoms:
B. licheniformis and B. subtilis are associated with food-borne diarrheal illness.

Treatment:
It should be noted that the level of Bacillus spp should be considered in context of clinical symptoms. The level may be neither beneficial nor pathogenic. Where present, often inadequate levels of beneficial bacteria are also noted. These organisms may become dysbiotic at high levels where treatment may become necessary.
Natural Microbials:
In high levels of Bacillus spp, a combination of berberine and plant tannins have shown a high susceptibility success for treatment.
Antibiotics:
B. species is almost always susceptible to clindamycin, erythromycin and vancomycin.

ELEVATED PSEUDOMONAS SPECIES LEVEL:

Sources:
Pseudomonas is found in water and soil as well as fruits and vegetables.
Bottled water can be a common source of infection.
Because the organism is able to survive aqueous environments, it is an important nosocomial pathogen. Pseudomonas can also be found on a number of surfaces and in aqueous solutions.

Pathogenicity:
Pseudomonas is considered an opportunistic pathogen.

Symptoms:
In the gastrointestinal tract it can cause inflammation, epithelial barrier dysfunction, tight cell junction interruption, and intestinal permeability.

Treatment:
Ciprofloxacin is recommended for the treatment of Pseudomonas induced antibiotic-associated colitis. Pseudomonas is usually susceptible to antipseudomonal penicillins, aminoglycosides, carbapenems, 3rd generation cephalosporins and gentamycin.
For further treatment suggesstions, refer to the 4R protocol at the end of this report.

METHANOBACTERIACEAE:
Of the Methanobacteriaceae(family), Methanobrevibacter smithii is the main human methanogen almost always found in the digestive tract of adults.
Methanobacter species facilitate carbohydrate fermentation and short-chain fatty acid production by beneficial bacteria.
Lower levels may indicate reduced production of short-chain fatty acids and may be associated with inflammation.
Higher levels linked to chronic constipation, as well as some types of SIBO and IBS which often correlate to a SIBO breath test.

OXALOBACTER COMMENT:
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.
Levels of O. Formigenes tends to decrease with age as well as with the use of antibiotics or other drugs, with low levels identified as a risk factor for calcium oxide stone formation. Treatment options include probiotic treatment and low oxalate diet modification.
Urinary oxalate levels can also be monitored by test code 4025 (oxalate urinary).

LAB ID : 000000000
UR NO. : 000000000
Collection Date : DD-MM-YYYY
Received Date: DD-MM-YYYY

LAB ID:00000000

Potential Autoimmune Comments

ELEVATED CITROBACTER FREUNDII LEVEL:

Sources:
Citrobacter is a gram-negative bacteria in the Enterobacteriaceae family. Common in the environment and may be spread by person-to person contact. Several outbreaks have occurred in babies in hospital units. Isolated from water, fish, animals and food.

Pathogenicity:
Citrobacter is considered an opportunistic pathogen and therefore can be found in the gut as part of the normal flora.

Symptoms:
Citrobacter has occasionally been implicated in diarrheal disease, particularly C. freundii and C. diversus and C. koseri

Treatment:
Treatment is not generally required in low amounts. However, where high levels are present and patients are symptomatic. A combination of oregano, plant tannins and oregano has shown high susceptibility.
For further information, refer to the 4R treatment protocol located at the end of this report.

FUSOBACTERIUM SPECIES:
Fusobacterium species is a gram-negative bacteria in the Fusobacteria phylum. The bacteria is a common member of the human oral microbiome, this pro-inflammatory bacterium can also be found in the human gut. In the mouth, high levels are strongly linked to oral hygiene. In the gut, high levels have been observed in individuals with colon cancer and appendicitis. Review Fusobacterium levels in conjunction with elevated calprotectin levels.

Sources:
It primarily uses protein as its main source. However, research also shows that it can thrive from sugar.

Treatment:
Antimicrobial botanicals such as berberine, oregano, quercetin, curcumin, green and black tea extracts, blueberry extract, cinnamon and rosemary have shown to decrease levels.

LAB ID : 000000000
UR NO. : 000000000
Collection Date : DD-MM-YYYY
Received Date: DD-MM-YYYY

LAB ID:00000000

Fungi/Yeasts Comment

ELEVATED CANDIDA SPECIES LEVEL:

Sources:
Most sources of Candida infection are thought to be of endogenous origin. While yeast are ubiquitous in the environment and are found on fruits, vegetables and other plant materials, contamination from external sources is linked to patients and health care workers.

Pathogenicity:
A normal inhabitant of the GI tract. May become an opportunistic pathogen after disruption of the mucosal barrier, imbalance of the normal intestinal flora and/or impaired immunity.
Risk factors for colonization include: Antibiotics, corticosteroids, antacids, H2 blockers, oral contraceptives, irradiation, GI surgery, Diabetes mellitus, burns, T cell dysfunction, chronic stress and chronic renal disease.

Symptoms:
The most common symptom attributable to non-invasive yeast overgrowth is diarrhoea. Symptoms of chronic candidiasis affect four main areas of the body.

1. Intestinal system - symptoms include: diarrhoea, constipation, abdominal discomfort, distention, flatulence and rectal itching.
2. Genital Urinary system - symptoms include: menstrual complaints, vaginitis, cystitis and urethritis.
3. Nervous system - symptoms include: severe depression, extreme irritability, inability to concentrate, memory lapses and headaches.
4. Immune system - symptoms include urticaria, hay fever, asthma, and external otitis.

Sensitivities to tobacco, perfumes, diesel fumes and other chemicals.

Treatment:
Currently, standard texts provide no specific antifungal guidelines for GI overgrowth of Candida.
Oral azoles have been recommended for extra intestinal infections.
Susceptibility testing is advised due to increasing drug resistance.

Phyla Microbiota Comment

BACTEROIDETES PHYLUM:
Bacteroidetes make up approximately 28% of the gut Microbiota in healthy human adults. They are early colonisers of the infant gut and are amongst the most stable, at a species and strain level, in the host.

FIRMICUTES PHYLUM:
Firmicutes constitutes the most diverse and abundant group of gastrointestinal microbiota which are grouped into four classes, Bacilli, Clostridia, Erysipelotrichia, and Negativicutes. According to current literature, about 39% of gut bacteria is made up of firmicutes and may increase to as high as 80% in an imbalanced microbial community.

Normal Bacterial Flora Comment

LOW BIFIDOBACTERIUM LONGUM LEVEL:
Bifidobacterium longum is one of the well-established probiotic strains with numerous profound health benefits in humans. Supplementing with Bifidobacterium longum has been effective in alleviating gastrointestinal, immunological and infectious diseases. Increasingly, evidence is accumulating which shows beneficial effects of supplementation with bifidobacteria for the improvement of human health conditions ranging from protection against infection to different extra- and intra-intestinal positive effects. Moreover, bifidobacteria have been associated with the production of a number of potentially health promoting metabolites including short chain fatty acids.

ELEVATED ESCHERICHIA SPECIES LEVEL:
The Gram-negative genus in the Proteobacteria phylum, which are considered normal gut flora. Escherichia coli (E. coli) is the primary species in this genus. Most E. coli are non-pathogenic. Elevated levels may be indicative of increased intestinal inflammatory activity.

LOW LACTOBACILLUS RHAMNOSUS LEVEL:
Lactobacullus Rhamnosus is a bacteria in the Firmicutes phylum. Lactobacillus rhamnosus is one of the most widely used probiotic strains. Various health effects are well documented including the prevention and treatment of gastro-intestinal infections and diarrhea, and stimulation of immune responsesL. Low levels may be linked to poor digestive health, diarrhea and IBS symptoms.

SAMPLE REPORT
DD-MM-YYYY Female

LAB ID : 000000000
UR NO. : 000000000
Collection Date : DD-MM-YYYY
Received Date: DD-MM-YYYY

LAB ID:00000000