MARJA GIBBONS

-.VICTORIA MARTIN

NutriPATH
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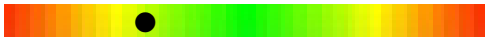
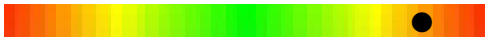
Date of Birth : 06-Mar-1986
Sex : F
Collected : 18/Mar/2019
Received: 20-Mar-2019
31 SANCTUARY CIRCUIT
COWARAMUP WA 6284
Lab id : **3599174** UR#:

VICTORIA MARTIN NATUROPATHICS
PO BOX 1239
MARGARET RIVER WA 6285

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	Semiformed		**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.
Blood (Macro)	NEG	< +	**Blood (Macro)**- The presence of blood in the stool may indicate possible GIT ulcer, and must always be investigated immediately.

Calprotectin.	**11.0**	0.0 - 50.0	ug/g	
Pancreatic Elastase	**478.0**	> 200.0	ug/g	
Faecal Secretory IgA	**611.0**	510.0 - 2010.0	ug/g	
Faecal Zonulin	**42.0**	0.0 - 107.0	ug/g	
Faecal B-Glucuronidase	***4854.0* *H**	337.0 - 4433.0	U/g	

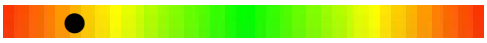
Microbiome Mapping Summary

Parasites & Worms

Bacteria & Viruses

Fungi and Yeasts

Key Phyla Microbiota

Bacteroidetes	***2.5* *L**	8.6 - 33.1	x10^11 org/g	
Firmicutes	**23.0**	5.7 - 30.4	x10^10 org/g	
Firmicutes:Bacteroidetes Ratio	**0.9**	< 1.0	RATIO	

Parasites and Worms.	**Result**	**Range**	**Units**

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	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
Entamoeba coli.	<dl	< 5.0	x10^6 org/g
Endolimax nana	<dl	< 1.0	x10^4 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		

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.	0.4	< 1.0	x10^5 org/g
Enterococcus faecalis	<dl	< 1.0	x10^4 org/g
Enterococcus faecium	0.2	< 1.0	x10^4 org/g
Morganella species	<dl	< 1.0	x10^3 org/g
Pseudomonas species	<dl	< 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	0.2	< 5.0	x10^2 org/g
Streptococcus species	0.9	< 1.0	x10^3 org/g
Potential Autoimmune Triggers			
Citrobacter species.	0.4	< 5.0	x10^5 org/g
Citrobacter freundii.	<dl	< 5.0	x10^5 org/g
Klebsiella species	<dl	< 5.0	x10^3 org/g
Klebsiella pneumoniae.	<dl	< 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

Fungi & Yeast	Result	Range	Units
Candida species.	<dl	< 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

Bacterial Pathogens	Result	Range	Units

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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	0.3	< 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

Normal Bacterial GUT Flora	Result	Range	Units
Bacteroides fragilis	*0.8* *L	1.6 - 250.0	x10^9 CFU/g
Bifidobacterium species	130.0	> 6.7	x10^7 CFU/g
Enterococcus species	*0.5* *L	1.9 - 2000.0	x10^5 CFU/g
Escherichia species	34.0	3.7 - 38000	x10^6 CFU/g
Lactobacillus species	8.8	8.6 - 6200.0	x10^5 CFU/g
Clostridium species	*<DL (a)* *L	1.2 - 1000.0	x10^3 CFU/g
Enterobacter species	12.9	1.0 - 50.0	x10^6 CFU/g

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Pathogen Summary:

Macroscopy Comment

BROWN coloured stool is considered normal in appearance.

SEMI FORMED stools may indicate dysbiosis, food allergy or intolerance, laxative use, high dose Vitamin C and magnesium. May also indicate an infection (bacterila or viral), amoeba or Giardia, Irritable Bowel Syndrome,Intestinal permeablilty, Coeliac Disease, malabsorption, maldigestion or stress.
Treatment:
• Investigate and treat possible underlying cause.
• Assess other CDSA markers such as pH, pancreatic elastase 1 & microbiology markers.

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:
Low/Absent inflammation of the GIT.
Patients without GIT inflammation and untreated IBS sufferers have levels below 50 ug/g.

FAECAL SECRETORY IgA:
Production of sIgA is important to the normal function of the gastrointestinal mucosa as an immune barrier.
It represents the first line immune defense of the GIT.
Elevated levels are associated with an upregulated immune response.

beta GLUCURONIDASE ELEVATED:
Suspect increased activation and enterohepatic recirculation of toxins, hormones, and various drugs within the body. Increased burden on glucuronidation pathway is associated with increased risk of colorectal, prostate and breast cancers.

Treatment:
Consider Calcium-D-glucarate which may assist with lowering B-glucuronidase levels. It is also suggested to introduce a low-calorie/vegetarian diet for 4 weeks which may also be beneficial with lowering faecal B-glucuronidase levels.

Phyla Microbiota Comment

LOW BACTEROIDES LEVEL:
Bacteroides are considered a beneficial organism in the gut. Bacteroides are fighting fat cells and work in the reverse to firmicutes. Bacteroides are anaerobic bacteria which can live without an oxygen supply which is why they can thrive when polyphenols are consumed. Polyphenols can be explained as the poisons on the skin of fruits, and vegetables which actually fight off invading pathogens. However, most firmicutes are aerobic which need a supply of oxygen to live and tend to die off when there are high amounts of polyphenols entering the gastrointestinal tract.
Higher levels of bacteroides are preferred.

Normal Bacterial Flora Comment

LOW BACTEROIDES FRAGILIS LEVEL:
Organism of the Bacteroidetes phylum. Immune-modulating normal gut species believed to be involved in microbial balance, barrier integrity, and neuroimmune health.
Low levels may contribute to reduced anti- inflammatory activity in the intestine.

LOW ENTEROCOCCUS SPECIES LEVEL:
Organism of the Firmicutes phylum.
Low levels may indicate insufficiency of beneficial bacteria.

LOW CLOSTRIDIUM SPECIES LEVEL:
Organism of the Firmicutes phylum. The Clostridium genus is diverse and consists of both pathogens and normal commensals that perform a wide variety of functions (beneficial and potentially harmful).
Low levels may be due to insufficient fiber intake.

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The 5 R Treatment Protocol

The Five "R" Treatment Protocol

The 5R Protocol is a widely accepted clinical guideline to treating pathogens and imbalances in the GI microbiota and restoring health to the gastrointestinal tract. Re-test patients in 3-6 months to monitor progress and make changes to the treatment protocol as needed.

REMOVE Using a course of antimicrobial, antiviral, antifungal, or antiparasitic therapies in cases where these organisms are present. It may also be necessary to remove offending foods, gluten, or medication that may be acting as antagonists.

Antimicrobial	Broad-spectrum antimicrobial herbs including: berberine, caprylic acid, garlic oil, oil of oregano, uva ursi, olive leaf extract.
Antibiotics	Research the recommended antibiotic for the specific microbe present. Avoid medications to which the microbe is thought to have resistance.
Antifungal	Caprylic acid, garlic oil, oil of oregano, olive leaf extract.
Antiparasitic	Black walnut, garlic oil, oil of oregano, Artemisia (wormwood), berberine, goldenseal, gentian root extract, quassia bark extract, citrus seed extract.
Antiviral	Olive leaf extract, purified silver, cat's claw, monolaurin, osha root (Ligusticum porteri), vitamin A, vitamin C, vitamin D, reishi mushrooms, Echinacea, zinc.

REPLACE In cases of maldigestion or malabsorption, it may be necessary to restore proper digestion by supplementing with digestive enzymes.

Digestive support	Betaine hydrochloride, apple cider vinegar, herbal bitters, ox bile, lactase, pancreatic enzymes (amylase, lipase, protease), pepsin.

REINOCULATE Recolonization with healthy, beneficial bacteria.
Supplementation with probiotics, along with the use of prebiotics helps re-establish the proper microbial balance.

Probiotics	Lactobacillus acidophilus, Bifidobacterium bifidum, Bifidobacterium longum, Lactobacillus rhamnosus, Bifidobacterium breve, Saccharomyces boulardii, Lactobacillus casei.
Prebiotics	Beta-glucan, fiber, inulin, pectin, xylooligosaccharides, galactooligosaccharides, larch arabinogalactans.

REPAIR Restore the integrity of the gut mucosa by giving support to healthy mucosal cells, as well as immune support.

Immune Support	Colostrum, immunoglobulins, S. boulardii
Intestinal Barrier Repair	L-Glutamine, aloe vera extract, deglycyrrhizinated licorice, marshmallow root, okra, N-acetyl glucosamine, quercetin, S. boulardii, slippery elm, zinc carnosine, vitamin A, essential fatty acids, B vitamins.

REBALANCE Address whole body health and lifestyle factors so as to prevent future GI dysfunction.

Support Consideration	Sleep, diet, exercise, and stress management