NutriPATH
Integrative Pathology Services
P: 1300 688 522
E: info@nutripath.com.au
A: PO Box 442 Ashburton VIC 3142

TEST PATIENT

Date of Birth : 10-Aug-1954
Sex : M
Collected : 11-Jul-2016
1 TEST STREET
MELBOURNE 3004
Lab id : **3436714** UR#:

Dr.TEST DOCTOR

TEST HEALTH CENTRE
123 TEST STREET
BURWOOD VIC 3125

COMPLETE MICROBIOME MAPPING-Test Code 2206

General Macroscopic Description

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

GASTROINTESTINAL MARKERS:

Calprotectin	56.00 *H*	19.0-50.0	ug/g	
Pancreatic Elastase	450	200-500	ug/g	
Secretory IgA	1210	510- 2010.00	ug/g	
Zonulin	36	0.00- 107.00	ng/g	
B-Glucuronidase	4200	337.0- 4433.0	U/mL	

MICROBIOME MAPPING SUMMARY:

PARASITES & WORMS

Blastocystis Hominis

BACTERIA & VIRUSES

Pseudomonas Spp
Staphylococcus
Streptococcus
Klebsiella
Clostridia Toxin A& B

FUNGI & YEAST

Geotrichum Species

Phyla Microbiota			
Bacteroidetes	4.33e11	1.00e10 - 5.00e11	org/g
Firmicutes	*1.25e11 *H**	1.00e9 - 5.00e10	org/g
Firmicutes:Bacteroidetes Ratio	0.29	<1.00	org/g

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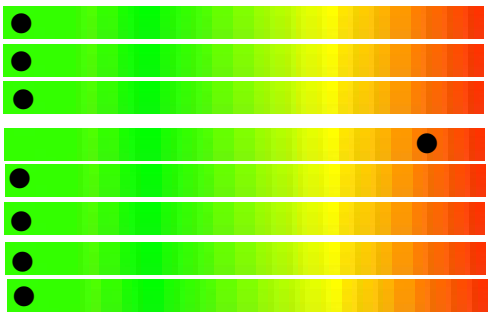
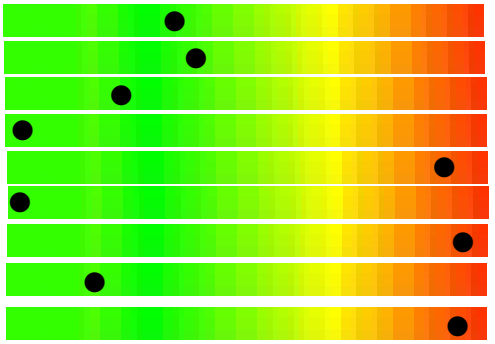
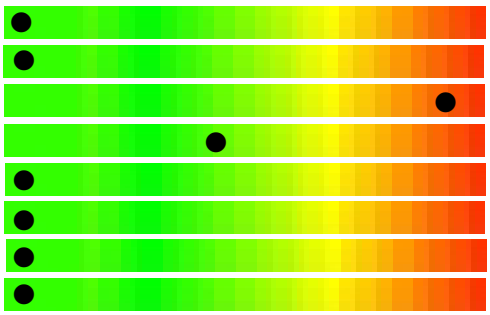
Parasites & Worms:	Result:	Range	Units
Parasites			
Cryptosporidum	<dl	<1.00e6	org/g
Entamoeba histolytica	<dl	<1.00e4	org/g
Giardia	<dl	<5.00e3	org/g
Blastocystis Hominis	2.20e3	<2.00e3	org/g
Dientamoeba fragilis	<dl	<1.00e5	org/g
Entamoeba coli	<dl	<5.00e6	org/g
Endolimax nana	<dl	<1.00e4	org/g
Pentatrichomonas hominis	<dl	<1.00e2	org/g
Worms:			
Ancylostoma duodenale	Not Detected	Not Detected	
Ascaris lumbricoides	Not Detected	Not Detected	
Necator americanus	Not Detected	Not Detected	
Trichuris trichiura	Not Detected	Not Detected	
Taenia spp.	Not Detected	Not Detected	



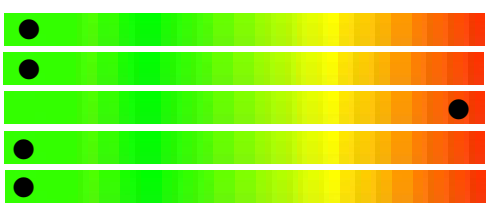
Comment: Not Detected results indicate the absence of detectable DNA in this sample for the five worms reported.

Opportunistic Bacteria/Overgrowth:	Result:	Range	Units
Bacillus spp.	8.30e4	<1.50e5	org/g
Enterococcus faecalis	2.56e3	<1.00e4	org/g
Enterococcus faecium	1.11e3	<1.00e4	org/g
Morganella spp.	<dl	<1.00e3	org/g
Pseudomonas spp.	7.37e4 *H*	<1.00e4	org/g
Pseudomonas aeruginosa	<dl	<5.00e2	org/g
Staphylococcus spp.	1.93e4 *H*	<1.00e4	org/g
Staphylococcus aureus	1.23e1	<5.00e2	org/g
Streptococcus spp.	1.34e3 *H*	<1.00e3	org/g
Potential Autoimmune Triggers:			
Citrobacter spp.	<dl	<5.00e6	org/g
Citrobacter freundii	<dl	<5.00e5	org/g
Klelbsiella spp.	2.48e4 *H*	<5.00e3	org/g
Klebsiella pneumoniae	1.41e4	<5.00e4	org/g
Mycobacterium tuberculosis	<dl	<5.00e3	org/g
Prevotella copri	<dl	<1.00e7	org/g
Proteus spp.	<dl	<5.00e4	org/g
Proteus mirabilis	<dl	<1.00e3	org/g





Fungi & Yeast:	Result:	Range	Units
Candida spp.	<dl	<5.00e3	org/g
Candida albicans	<dl	<5.00e2	org/g
Geotrichum spp.	4.00e3 *H*	<3.00e2	org/g
Microsporidium spp.	<dl	<5.00e3	org/g
Rodotorula spp.	<dl	<1.00e3	org/g



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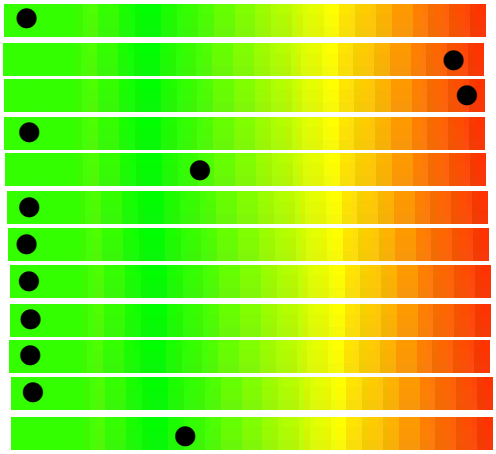
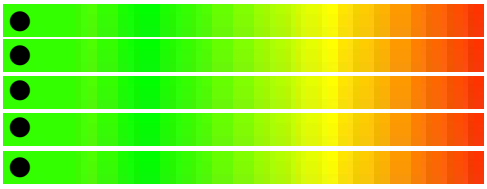
Bacterial Pathogens	Result:	Range	Units
Campylobacter	<dl	<1.00e3	
C. difficile, Toxin A	1.21e5 *H*	<1.00e3	
C. difficile, Toxin B	2.27e5 *H*	<1.00e3	
Enterohemorrhagic E. coli	<dl	<1.00e3	
E. coli O157	8.60e0	<1.00e2	
Enteroinvasive E. coli/Shigella	<dl	<1.00e3	
Enterotoxigenic E. coli LT/ST	<dl	<1.00e3	
Shiga-like Toxin E. coli stx1	<dl	<1.00e3	
Shiga-like Toxin E. coli stx2	<dl	<1.00e3	
Salmonella	<dl	<1.00e4	
Vibrio cholerae	<dl	<1.00e5	
Yersinia enterococlitica	4.46e1	<1.00e5	

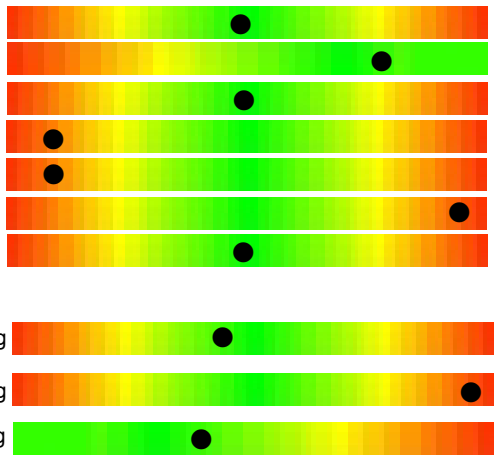


Viral Pathogens	Result:	Range	Units
Adenovirus 40/41	<dl	<1.00e10	CFU/g
Norovirus GI/II	<dl	<1.00e7	CFU/g
Cytomegalovirus	<dl	<1.00e5	CFU/g
Epstein Barr Virus	<dl	<1.00e7	CFU/g
Helicobacter pylori	<dl	<1.0e3	CFU/g



Comment: Helicobacter Pylori viurlence factors will be listed below if detected POSITIVE

Normal Bacterial GUT Flora	Result:	Range	
Bacteroides fragilis	1.1e11	1.60e9 - 2.50e1	
Bifidobacterium spp.	2.4e10	>6.70e7	
Enterococcus spp.	4.9e7	1.9e5 - 2.00e8	
Escherichia spp.	6.1e5 *L*	3.70e6 - 3.80e9	
Lactobacillus spp.	3.7e4 *L*	8.6e5 - 6.20e8	
Clostridium spp.	6.25e6 *H*	1.20e3 - 1.00e6	
Enterobacter spp.	9.16e6	1.00e6 - 5.00e7	
Phyla Microbiota			
Bacteroidetes	4.33e11	1.00e10 - 5.00e11	org/g
Firmicutes	*1.25e11 *H**	1.00e9 - 5.00e10	org/g
Firmicutes:Bacteroidetes Ratio	0.29	<1.00	org/g



Comment: The "friendly bacteria", Lactobacilli and Bifidobacterium, are important for gastrointestinal function, as they are involved in vitamin synthesis, natural antibiotic production, immune defense, digestion, detoxification of pro-carcinogens and a host of other activities. Reestablishing healthy levels may be desirable. Other low levels of normal gut flora have been noted at less than ample amounts in dysbiosis, and often rebound when intestinal imbalances are corrected.

The ratio of Firmicutes to Bacteroidetes in the stool is a gauge of overall gut microbiota balance.

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Pathogen Summary:

BLASTOCYSTIS HOMINIS:

Sources:
This organism is transmitted via the fecal-oral route or from contaminated food or water. Prevention can be enhanced by improving personal hygiene and sanitary conditions.

Pathogenicity:
When this organism is present in the absence of any other parasites, enteric organisms or viruses, it may be considered the etiological agent of disease.

Symptoms:
Symptoms can include: diarrhea, cramps, nausea, fever, vomiting and abdominal pain. B. hominis has been associated with irritable bowel syndrome, infective arthritis and intestinal obstruction.

PSEUDOMONAS SPECIES:

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:
Associated with diarrhoeal infection, particularly in the immunocompromised host.

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.

Other Herbal antimicrobials include:
Andrographis, Tea tree, Prunus armeniaca, Prunella vulgaris, Nelumbo nucifera, Panax notoginseng root, Panax notoginseng flower, Punica granatum, Areca catechu and Imperata cylindrical.

STAPHYLOCOCCUS AUREUS:

Sources:
Foods that require considerable handling during preparation or that are kept at slightly elevated temperatures after preparation are frequently involved in staphylococcal food poisoning.
The key foods associated with staphylococcal food poisoning include meat and meat products; poultry and egg products; salads such as egg, tuna, chicken, potato, and macaroni; bakery products such as cream-filled pastries, cream pies, and chocolate eclairs; sandwich fillings; and milk and dairy products.

Pathogenicity:
Food poisoning is often attributed to the staphylococcal enterotoxin.
The toxin produced by the bacteria is very heat-stable and therefore not easily destroyed by heat at normal cooking temperatures. The toxin can remain, despite the organism being destroyed. There is considerable variation in susceptibility to the enterotoxin in adults. Children and the elderly have the highest degree of susceptibility.

Symptoms:
Symptoms of staphylococcal food poisoning usually appear within 1 to 6 hours after ingestion. The individual response to the toxin may vary and depends upon the amount of contaminated food eaten, the amount of toxin ingested, and general health status.
Nausea, vomiting, abdominal cramping, and diarrhea are the most common symptoms. In more severe cases, headache, muscle cramping, and changes in blood pressure and pulse rate may occur. Recovery generally takes two days. It is not unusual for complete recovery to take three days and sometimes longer

Treatment:
In most cases, treatment for S. aureus infection is not necessary and complete recovery usually occurs after cessation of symptoms.

Other Herbal antimicrobials include:
Peppermint, Clove, Tea tree, Eucalyptus, Lemongrass, Ginger, Reishi, Red root, Quing Hao, Sida.

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Pathogen Summary:

KLEBSIELLA:
Sources:
Isolated from foods and environmental sources.
Klebsiella appears to thrive in individuals on a high starch diet.
Avoiding carbohydrates such as rice, potatoes, flour products and sugary foods reduces the amount of Klebsiella in the gut

Pathogenicity:
Part of the normal GI flora in small numbers, but can be an opportunistic pathogen.
Klebsiella is capable of translocating from the gut when in high numbers.
Certain strains of K. oxytoca have demonstrated cytotoxin production.

Symptoms:
K. pneumoniae and K. oxytoca have been associated with diarrhea in humans.
Cytotoxin-producing strains are associated with acute hemorrhagic enterocolitis.
Increased colonization of Klebsiella in the stool has been found in HLA-B27 + AS patients.

Treatment:
Currently, standard texts provide no specific antimicrobial guidelines for GI overgrowth of Klebsiella.
Third generation cephalosporins and fluroquinolones are the recommended antimicrobial agents for extra-intestinal sites.

Other Herbal antimicrobials include:
Lemon and clove, Burr marigold, Thyme, Licorice, euphobia, cordyceps.

GEOTRICHUM SPECIES:
Geotrichum are yeast belonging to the Endomyceteaceae family.

Sources:
This organism can be found in soil, dairy products and in human skin and mucosae.

Pathogenicity:
Usually only considered an opportunistic pathogen in immune-compromised hosts. Geotrichum candidum is the etiological agent of Geotrichosis. Geotrichum may also play a role in IBS.

Symptoms:
Symptoms of Geotrichum infection have been associated with diarrhea and enteritis.
Symptoms of Geotrichosis may resemble those of candidiasis.

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