Diagnostic Solutions laboratory

Patient: Ima Test

Collected:

DOB:

Accession:

Received:

Completed:

Ordered by: Diagnostic Solutions Lab

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GI-MAP®
GI Microbial Assay Plus

DNA STOOL ANALYSIS BY QUANTITATIVE PCR

YOUR PERSONALIZED REPORT

PATHOGENS

The testing includes pathogens (bacterial, parasitic and viral) commonly known to cause gastroenteritis. Note that not all individuals with positive findings will present with symptoms. Many factors, including the health of the individual (such as immune health, digestive function, and microbiome balance), the transient nature of most pathogens, and the presence and expression of virulence factors, all contribute to pathogen virulence and individual symptoms.

BACTERIAL PATHOGENS	Result	Reference
Campylobacter	<dl	< 1.00e3
C. difficile Toxin A	<dl	< 1.00e3
C. difficile Toxin B	<dl	< 1.00e3
Enterohemorrhagic E. coli	<dl	< 1.00e3
E. coli O157	<dl	< 1.00e3
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 enterocolitica	<dl	< 1.00e5
PARASITIC PATHOGENS		
Cryptosporidium	<dl	< 1.00e6
Entamoeba histolytica	<dl	< 1.00e4
Giardia	<dl	< 5.00e3
VIRAL PATHOGENS		
Adenovirus 40/41	<dl	< 1.00e10
Norovirus GI/II	<dl	< 1.00e7

KEY: Results are reported as genome equivalents per gram of stool, which is a standard method for estimating the number of microbes measured per gram of stool, based on qPCR analysis of DNA samples.

Results are expressed in standard scientific notation. For example, a reported result of 3.5e7 is equivalent to 3.5×10^{7} microbes per gram, which equals 35,000,000 (35 million) microbes per gram of stool.
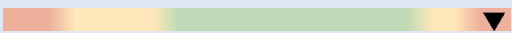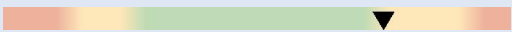
< dl represents results below detectable limit.

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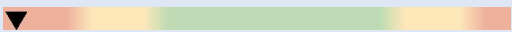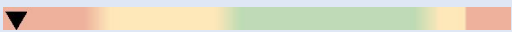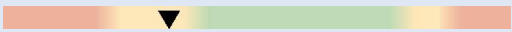
HELICOBACTER PYLORI

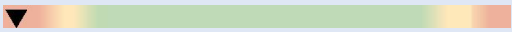| H. PYLORI & VIRULENCE FACTORS	Result	Reference
Helicobacter pylori	2.22e2	< 1.00e3
Virulence Factor, babA	N/A	Negative
Virulence Factor, cagA	N/A	Negative
Virulence Factor, dupA	N/A	Negative
Virulence Factor, iceA	N/A	Negative
Virulence Factor, oipA	N/A	Negative
Virulence Factor, vacA	N/A	Negative
Virulence Factor, virB	N/A	Negative
Virulence Factor, virD	N/A	Negative

COMMENSAL/KEYSTONE BACTERIA

COMMENSAL BACTERIA	Result		Reference
Bacteroides fragilis	3.21e11 H		1.6e9 - 2.5e11
Bifidobacterium spp.	5.26e7 L		> 6.7e7
Enterococcus spp.	4.06e7		1.9e5 - 2.0e8
Escherichia spp.	1.51e10 H		3.7e6 - 3.8e9
Lactobacillus spp.	9.12e2 L		8.6e5 - 6.2e8
Enterobacter spp.	2.62e7		1.0e6 - 5.0e7
Akkermansia muciniphila	<dl L		1.0e1 - 8.2e6
Faecalibacterium prausnitzii	1.62e5		1.0e3 - 5.0e8
Roseburia spp.	1.56e8		5.0e7 - 2.0e10

BACTERIAL PHYLA	Result		Reference
Bacteroidetes	7.12e12 H		8.6e11 - 3.3e12
Firmicutes	2.11e10 L		5.7e10 - 3.0e11
Firmicutes:Bacteroidetes Ratio	0.00		< 1.0

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OPPORTUNISTIC/OVERGROWTH MICROBES

DYSBIOTIC & OVERGROWTH BACTERIA	Result		Reference
Bacillus spp.	1.46e5		< 1.76e6
Enterococcus faecalis	2.98e3		< 1.00e4
Enterococcus faecium	1.23e2		< 1.00e4
Morganella spp.	<dl		< 1.00e3
Pseudomonas spp.	**2.06e8**	**High ↑**	< 1.00e4
Pseudomonas aeruginosa	**5.46e5**	**High ↑**	< 5.00e2
Staphylococcus spp.	**1.11e4**	**High ↑**	< 1.00e4
Staphylococcus aureus	9.93e1		< 5.00e2
Streptococcus spp.	3.95e2		< 1.00e3
COMMENSAL OVERGROWTH MICROBES			
Desulfovibrio spp.	1.76e7		< 7.98e8
Methanobacteriaceae (family)	1.02e8		< 3.38e8
INFLAMMATORY & AUTOIMMUNE-RELATED BACTERIA			
Citrobacter spp.	**8.05e6**	**High ↑**	< 5.00e6
Citrobacter freundii	4.50e4		< 5.00e5
Klebsiella spp.	**7.18e4**	**High ↑**	< 5.00e3
Klebsiella pneumoniae	1.19e3		< 5.00e4
M. avium subsp. paratuberculosis	<dl		< 5.00e3
Proteus spp.	**6.01e5**	**High ↑**	< 5.00e4
Proteus mirabilis	6.97e2		< 1.00e3
COMMENSAL INFLAMMATORY & AUTOIMMUNE-RELATED BACTERIA			
Enterobacter spp.	2.62e7		< 5.00e7
Escherichia spp.	**1.51e10**	**High ↑**	< 3.80e9
Fusobacterium spp.	3.25e6		< 1.00e8
Prevotella spp.	1.70e7		< 1.00e8

FUNGI/YEAST

FUNGI/YEAST	Result	Reference
Candida spp.	<dl	< 5.00e3
Candida albicans	<dl	< 5.00e2
Geotrichum spp.	<dl	< 3.00e2
Microsporidium spp.	<dl	< 5.00e3
Rhodotorula spp.	<dl	< 1.00e3

VIRUSES
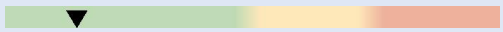
VIRUSES	Result	Reference
Cytomegalovirus	<dl	< 1.00e5
Epstein-Barr Virus	<dl	< 1.00e7

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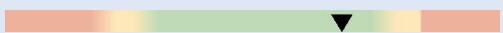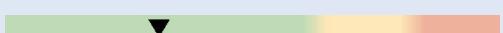
PARASITES

PROTOZOA	Result	Reference
Blastocystis hominis	<dl	< 2.00e3
Chilomastix mesnili	<dl	< 1.00e5
Cyclospora spp.	<dl	< 5.00e4
Dientamoeba fragilis	<dl	< 1.00e5
Endolimax nana	<dl	< 1.00e4
Entamoeba coli	<dl	< 5.00e6
Pentatrichomonas hominis	<dl	< 1.00e2

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

INTESTINAL HEALTH MARKERS

DIGESTION	Result		Reference
Steatocrit	<dl	▼	< 15 %
Elastase-1	>750	▼	> 200 ug/g

GI MARKERS			
β-Glucuronidase	1198	▼	< 2486 U/mL
Occult Blood - FIT	<dl	▼	< 10 ug/g

IMMUNE RESPONSE			
Secretory IgA	1435	▼	510 - 2010 ug/g
Anti-gliadin IgA	108	▼	< 175 U/L
Eosinophil Activation Protein (EDN, EPX)	1.10	▼	< 2.34 ug/g

INFLAMMATION			
Calprotectin	21	▼	< 173 ug/g

ADD-ON TESTS			
Stool Gluten Peptide	372.0	▼	< 5.0 ng/g
Zonulin	125.0	▼	< 175 ng/g

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H. PYLORI ANTIBIOTIC RESISTANCE GENES

	Result	Reference
Amoxicillin	N/A	**Negative**
Genes associated with amoxicillin resistance		
PBP1A S414R	N/A	
PBP1A T556S	N/A	
PBP1A N562Y	N/A	

	Result	Reference
Clarithromycin	N/A	**Negative**
Genes associated with clarithromycin resistance		
A2142C	N/A	
A2142G	N/A	
A2143G	N/A	

	Result	Reference
Fluoroquinolones	N/A	**Negative**
Genes associated with fluoroquinolone resistance		
gyrA N87K	N/A	
gyrA D91N	N/A	
gyrA D91G	N/A	
gyrB S479N	N/A	
gyrB R484K	N/A	

	Result	Reference
Tetracycline	N/A	**Negative**
Genes associated with tetracycline resistance		
A926G	N/A	
AGA926-928TTC	N/A	

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UNIVERSAL ANTIBIOTIC RESISTANCE GENES

b-Lactams	Result: Negative	Reference: Negative	Macrolides	Result: Negative	Reference: Negative	Trimethoprim	Result: Negative	Reference: Negative
blaNDM-1	Absent		acrA	Absent		dfrA1	Absent	
CTX-M 1	Absent		acrB	Absent		dfrA12	Absent	
CTX-M 2	Absent		emrE	Absent		dfrA14	Absent	
CTX-M 8/25	Absent		ermA	Absent		dfrA15	Absent	
CTX-M 9	Absent		ermB	Absent		dfrA17	Absent	
GES	Absent		ermC	Absent		dfrA5	Absent	
OXA-1	Absent		macA	Absent		dfrA7	Absent	
PER-1	Absent		macB	Absent		dfrB1	Absent	
PER-2	Absent		mefA	Absent		dfrB2	Absent	
SHV	Absent		mphA	Absent		dfrB3	Absent	
TEM	Absent		msrA	Absent				
VEB	Absent		tolc	Absent				

Fluoroquinolones	Result: **Positive**	Reference: Negative	Ciprofloxacin	Result: Negative	Reference: Negative	Sulfonamides	Result: **Positive**	Reference: Negative
qnrA	**Present**		emea	Absent		sul1	**Present**	
qnrB	Absent		pmra	Absent		sul2	**Present**	
qnrS1	Absent					sul3	**Present**	

Vancomycin	Result: Negative	Reference: Negative	Nitroimidazoles	Result: Negative	Reference: Negative	Methacillin	Result: Negative	Reference: Negative
vanA	Absent		nimA	Absent		mecA	Absent	
vanA2	Absent		nimB	Absent				
vanB	Absent		nimC	Absent		**Chloramphenicol**	Negative	Negative
vanC1	Absent		nimD	Absent		cata13	Absent	
vanC2-1	Absent		nimE	Absent				
vanC2-2	Absent							

Detection of resistance-associated genes may not confer phenotypic drug resistance. Detected genes cannot be associated with specific microbes.

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