GENOVA DIAGNOSTICS
63 Zillicoa Street
Asheville, NC 28801

GI effects®

Patient:

2209 GI Effects™ Fundamentals - Stool

Methodologies: GC/MS, Automated Chemistry, EIA, Immunoturbidimetric

	Result	QUINTILE DISTRIBUTION (1st 2nd 3rd 4th 5th)	Reference Range
Digestion and Absorption			
Pancreatic Elastase 1 †	>500	100 200	>200 mcg/g
Products of Protein Breakdown (Total*) (Valerate, Isobutyrate, Isovalerate)	7.8		1.8-9.9 micromol/g
Fecal Fat (Total*)	25.2		3.2-38.6 mg/g
Triglycerides	1.2		0.3-2.8 mg/g
Long-Chain Fatty Acids	12.2		1.2-29.1 mg/g
Cholesterol	2.3		0.4-4.8 mg/g
Phospholipids	9.5 H		0.2-6.9 mg/g
Inflammation and Immunology			
Calprotectin † ◆	< 11	50 100	<50 mcg/g
Eosinophil Protein X (EPX) †	0.5	0.5 2.7	<=2.7 mcg/g
Gut Microbiome Metabolites			
Metabolic			
Short-Chain Fatty Acids (SCFA) (Total*) (Acetate, n-Butyrate, Propionate)	60.0		>=23.3 micromol/g
n-Butyrate Concentration	12.0		>=3.6 micromol/g
n-Butyrate %	20.0		11.8-33.3 %
Acetate %	58.6		48.1-69.2 %
Propionate %	21.3		<=29.3 %

Beta-glucuronidase not available in NY.

**Total value is equal to the sum of all measurable parts.*

†These results are not represented by quintile values.

Methodology: Culture/MALDI-TOF MS, Automated and Manual Biochemical Methods, Vitek® 2 System Microbial identification and Antibiotic susceptibility

Gastrointestinal Microbiome (Culture)

Human microflora is influenced by environmental factors and the competitive ecosystem of the organisms in the GI tract. Pathogenic significance should be based upon clinical symptoms.

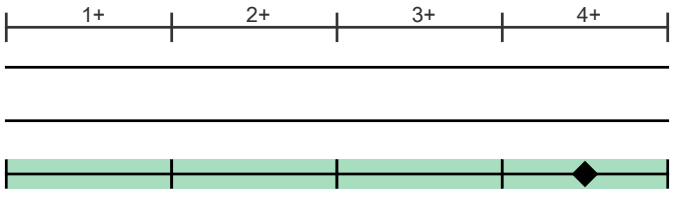
Microbiology Legend

NG	NP	PP	P
No Growth	Non-Pathogen	Potential Pathogen	Pathogen

Additional Bacteria

Non-Pathogen: Organisms that fall under this category are those that constitute normal, commensal flora, or have not been recognized as etiological agents of disease.
Potential Pathogen: Organisms that fall under this category are considered potential or opportunistic pathogens when present in heavy growth.
Pathogen: The organisms that fall under this category have a well-recognized mechanism of pathogenicity in clinical literature and are considered significant regardless of the quantity that appears in the culture.

Bacteriology (Culture)



Lactobacillus spp.		NG
Escherichia coli		NG
Bifidobacterium (Anaerobic Culture)	4+	NP

Additional Bacteria

Salmonella spp.		NG
Shigella spp.		NG
Haemolytic Escherichia coli	4+	NP
Klebsiella pneumoniae	4+	PP
gamma haemolytic Streptococcus	3+	NP

Mycology (Culture)

Rhodotorula species	1+	NP
Geotrichum species	2+	PP

OPTIONAL ADD-ON

KOH Preparation for Yeast

Methodology: Potassium Hydroxide (KOH) Preparation for Yeast

Potassium Hydroxide (KOH) Preparation for Yeast

These yeast usually represent the organisms isolated by culture. In the presence of a negative yeast culture, microscopic yeast may reflect organisms not viable enough to grow in culture. The presence of yeast on KOH prep should be correlated with the patient's symptoms. However, moderate to many yeast suggests yeast overgrowth.

	Result
KOH Preparation, stool	Few Yeast Present

The result is reported as the amount of yeast seen microscopically:
Rare: 1-2 per slide
Few: 2-5 per high power field (HPF)
Moderate: 5-10 per HPF
Many: >10 per HPF

Parasitology

Microscopic O&P Results

Microscopic O&P is capable of detecting all described gastrointestinal parasites. The organisms listed in the box represent those commonly found in microscopic stool analysis. Should an organism be detected that is not included in the list below, it will be reported in the Additional Results section. These results were obtained using wet preparation(s) and trichrome stained smear. For an extensive reference of all potentially detectable organisms, please visit www.gdx.net/product/gi-effects-comprehensive-stool-test

Genus/species	Result
Nematodes - roundworms	
Ancylostoma/Necator (Hookworm)	Not Detected
Ascaris lumbricoides	Not Detected
Capillaria philippinensis	Not Detected
Enterobius vermicularis	Not Detected
Strongyloides stercoralis	Not Detected
Trichuris trichiura	Not Detected
Cestodes - tapeworms	
Diphyllobothrium latum	Not Detected
Dipylidium caninum	Not Detected
Hymenolepis diminuta	Not Detected
Hymenolepis nana	Not Detected
Taenia spp.	Not Detected
Trematodes - flukes	
Clonorchis/Opisthorchis spp.	Not Detected
Fasciola spp./ *Fasciolopsis buski*	Not Detected
Heterophyes/Metagonimus	Not Detected
Paragonimus spp.	Not Detected
Schistosoma spp.	Not Detected
Protozoa	
Balantidium coli	Not Detected
Blastocystis spp.	Not Detected
Chilomastix mesnili	Not Detected
Cryptosporidium spp.	Not Detected
Cyclospora cayetanensis	Not Detected
Dientamoeba fragilis	Not Detected
Entamoeba coli	Not Detected
Entamoeba histolytica/dispar	Not Detected
Entamoeba hartmanii	Not Detected
Entamoeba polecki	Not Detected
Endolimax nana	Not Detected
Giardia	Not Detected
Iodamoeba buetschlii	Not Detected
Cystoisospora spp.	Not Detected
Trichomonads (e.g. *Pentatrichomonas*)	Not Detected
Additional Findings	
White Blood Cells	Not Detected
Charcot-Leyden Crystals	Not Detected
Other Infectious Findings	

Additional Results

Methodology: Fecal Immunochemical Testing (FIT)

	Result	Expected Value
Fecal Occult Blood◆	Negative	Negative
Color††	Brown	
Consistency††	Formed/Normal	

††Results provided from patient input.

Macroscopic/Direct Exam for Parasites

Methodology: Macroscopic Evaluation

No human parasite detected in sample.

Add-on Testing

Methodology: EIA

	Result	Expected Value
Campylobacter spp.◆	Negative	Negative
Clostridium difficile◆	Negative	Negative
Shiga toxin *E. coli*◆	Negative	Negative

***Campylobacter* spp.**

Campylobacter is a foodborne pathogen and cause of gastroenteritis. Infection occurs after consumption of contaminated food, particularly poultry, unpasteurized milk, and water. Patients may experience acute watery or bloody diarrhea, weight loss, and abdominal cramping. C. jejuni can also lead to autoimmune conditions like Guillain-Barre' syndrome.

Clostridium difficile

Clostridium difficile is an anaerobic, spore-forming gram-positive bacterium that can be part of the normal intestinal flora. After a disturbance of the gut flora (usually with antibiotics), colonization with toxin producing *Clostridium difficile* can take place. Not all colonized patients develop symptoms. When present, symptoms include bloody and non-bloody diarrhea, fever, abdominal pain and vomiting.

Shiga toxin *E. coli*

A positive result on the STEC EIA assay confirms the presence of Shiga-toxin 1 (STX-1) and/or Shiga-toxin 2 (STX-2). Shiga-toxin producing strains of E. coli have been demonstrated as important etiological agents of diarrhea and sporadic cases of hemorrhagic colitis and Hemolytic Uremic Syndrome. They are transmitted via fecal-oral route. They are also transmitted by personal contact with an infected person or consumption of contaminated food or water.

Methodology: Vitek 2® System Microbial Antibiotic susceptibility, Manual Minimum Inhibition Concentration

Bacteria Sensitivity

Prescriptive Agents

Klebsiella pneumoniae	R	I	S-DD	S	NI
Ampicillin	R				
Amox./Clavulanic Acid				S	
Cephalothin				S	
Ciprofloxacin				S	
Tetracycline				S	
Trimethoprim/Sulfa				S	

Prescriptive Agents:
The R (Resistant) category implies isolate is not inhibited by obtainable levels of pharmaceutical agent.
The I (Intermediate) category includes isolates for which the minimum inhibition concentration (MIC) values usually approach obtainable pharmaceutical agent levels and for which response rates may be lower than for susceptible isolates.
The S-DD (Susceptible-Dose Dependent) category implies clinical efficacy when higher than normal dosage of a drug can be used and maximal concentration achieved.
The S (Susceptible) column implies that isolates are inhibited by the usually achievable concentrations of the pharmaceutical agent.
NI (No Interpretive guidelines established) category is used for organisms that currently do not have established guidelines for MIC interpretation.
Refer to published pharmaceutical guidelines for appropriate dosage therapy.

Methodology: Vitek 2® System Microbial Antibiotic susceptibility, Manual Minimum Inhibition Concentration

Mycology Sensitivity

Non-absorbed Antifungals

Geotrichum species	LOW INHIBITION	HIGH INHIBITION
Nystatin		

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Nystatin:
In this assay, inhibition is defined as the reduction level on organism growth as a direct result of inhibition by Nystatin. The level of inhibition is an indicator of how effective Nystatin was at limiting the growth of an organism in an in vitro environment. High inhibition indicates a greater ability by Nystatin to limit growth, while Low Inhibition a lesser ability to limit growth.