



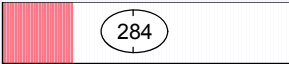
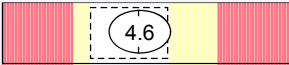
Patient: **SAMPLE PATIENT**

Age: 56  
Sex: M  
MRN:

Order Number:

Completed: June 27, 2007  
Received: June 21, 2007  
Collected: June 20, 2007

### Digestion/Absorption


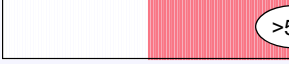
| Analyte                               | Result  | Reference Range    |
|---------------------------------------|---|--------------------|
| 1. Pancreatic Elastase 1 <sup>♦</sup> |  | >= 201 mcg/g       |
| 2. Putrefactive SCFAs (Total*)        |  | 1.3-8.6 micromol/g |

\*Total values equal the sum of all measurable parts.

### Digestion/Absorption

Digestion encompasses the functional activities of: mastication, gastric acid production, pancreatic activity, bile production and brush border maintenance. Absorption depends on all of the above actions, as well as a healthy gut mucosal barrier.

### Gut Immunology

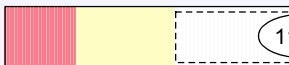

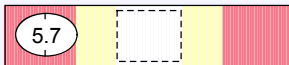
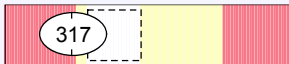
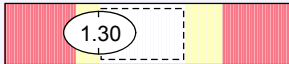
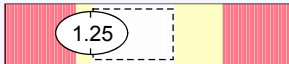

| Analyte                 | Result  | Reference Range |
|-------------------------|---|-----------------|
| 3. Eosinophil Protein X |   | <= 7.0 mcg/g    |
| 4. Calprotectin         |  | <= 50 mcg/g     |

### Gut Immunology

These immune markers are derived from the activation and degranulation of eosinophils (EPX) and neutrophils (calprotectin). EPX reflects inflammation and tissue damage and can be elevated in food allergies, celiac disease, helminthic infection, IBD and cancer.

Calprotectin is inflammation specific and can elevate with infection or post infectious IBS, NSAID enteropathy, IBD and cancer. Children with chronic diarrhea from cows milk allergy or multiple food allergies may also have increased calprotectin.

### Metabolic

| Analyte                      | Result  | Reference Range    |
|------------------------------|---|--------------------|
| 5. Beneficial SCFAs (Total*) |  | >= 13.6 micromol/g |
| 6. n-Butyrate                |  | >= 2.5 micromol/g  |
| 7. pH <sup>♦</sup>           |  | 6.1-7.9            |
| 8. Beta-glucuronidase        |  | 337-4,433 U/g      |
| <b>Bile Acids</b>            |   |                    |
| 9. Lithocholic acid (LCA)    |  | 0.65-5.21 mg/g     |
| 10. Deoxycholic acid (DCA)   |  | 0.67-6.76 mg/g     |
| 11. LCA / DCA Ratio          |  | 0.39-2.07          |

\*Total values equal the sum of all measurable parts.

### Metabolic

Gut metabolism is representative of the bacterial milieu, primarily through the presence of commensal bacteria. Metabolic activities include: mucous production, vitamin synthesis and absorption, deconjugation of steroid hormones and bile acids, fat regulation, and SCFA metabolism. These metabolic activities require a normal population of commensal bacteria without active bacterial, viral, or parasitic infection.

### Microbiology

#### Bacteriology

**12. Beneficial Bacteria**

|                       |  |      |
|-----------------------|--|------|
| Lactobacillus species |  | (2+) |
| Escherichia coli      |  | (4+) |
| Bifidobacterium       |  | (1+) |

**13. Additional Bacteria**

|                                |    |      |
|--------------------------------|----|------|
| alpha haemolytic Streptococcus | NP | (3+) |
| gamma haemolytic Streptococcus | NP | (3+) |
| Bacillus species               | NP | (2+) |
| Haemolytic Escherichia coli    | NP | (2+) |
| Klebsiella pneumoniae          | NP | (3+) |
| Staphylococcus aureus          | NP | (3+) |

**14. Mycology**

|                  |    |      |
|------------------|----|------|
| Candida albicans | NP | (1+) |
|------------------|----|------|

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

\*NG

No Growth

NP

Non-Pathogen

PP

Potential Pathogen

P

Pathogen

### Microbiology

The Markers in this section reflect the bacteriological status of the gut.

**Beneficial bacteria** Beneficial flora controls potentially pathogenic organisms, influences nutrient production, removes toxins from the gut and stimulates the intestinal immune system (GALT). The composition of the colonic flora is affected by diet, transit time, stool pH, age, microbial interactions, colonic availability of nutrients, bile acids, sulfate and the ability of the microbes to metabolize these substrates. Ideally, levels of Lactobacilli and E. coli should be 2+ or greater. Bifidobacteria being a predominate anaerobe should be recovered at levels of 4+.

#### 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 are well-recognized pathogens in clinical literature that have a clearly recognized mechanism of pathogenicity and are considered significant regardless of the quantity that appears in culture.

**Mycology:** Organisms that fall under this category constitute part of the normal colonic flora when present in small numbers. They may, however, become potential pathogens after disruption of the mucosal lining, which enables fungi to colonize and establish a local infection.

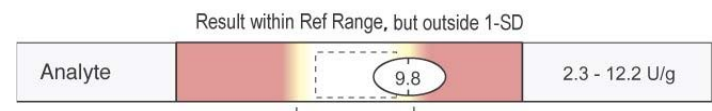
### Interpretation At A Glance

|  |  |
|--|--|
| <p><b>DIGESTIVE DEFICIENCY</b></p> <p>Analyte #: <input type="checkbox"/> <input type="checkbox"/></p>   | <p><b>DYSBIOSIS</b></p> <p>Analyte #: <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p>                  |
| <p><b>INFLAMMATION/IBD</b></p> <p>Analyte #: <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p> | <p><b>NEOPLASTIC RISK</b></p> <p>Analyte #: <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p> |

#### Interpretation at a glance

Represents an aggregate of abnormal indicators on the report.

The **Reference Range** is a statistical interval representing 95% or 2 Standard Deviations (2 S.D.) of the reference population. One Standard Deviation (1 S.D.) is a statistical interval representing 68% of the reference population. Values between 1 and 2 S.D. are not necessarily abnormal. Clinical correlation is suggested. (See example below)



Commentary is provided to the practitioner for educational purposes, and should not be interpreted as diagnostic or treatment recommendations. Diagnosis and treatment decisions are the responsibility of the practitioner.

The performance characteristics of all assays have been verified by Genova Diagnostics, Inc. Unless otherwise noted with as cleared by the U.S. Food and Drug Administration, assays are For Research Use Only.

***Additional Tests***

No additional tests were ordered



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PATIENT**

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### Parasitology

#### Microscopic Exam Results:

No Ova or Parasites seen  
White Blood Cells: Few

Specimen Tested: Stool

#### PARASITOLOGY EIA TESTS:

|                                     | In Range | Out of Range |
|-------------------------------------|----------|--------------|
| <i>Cryptosporidium</i>              | Negative |              |
| <i>Giardia lamblia</i>              | Negative |              |
| <i>Entamoeba histolytica/dispar</i> | Negative |              |

#### Parasitology

Optimized Parasite Recovery (OPR) is a technique used by Great Smokies Diagnostic Laboratory that involves combining multiple stool specimens submitted from the same patient for intestinal parasite examination as compared to individual sample evaluation. Research demonstrates that this method increases parasite recovery.

Data from analysis shows that parasites are detected in 22% of samples submitted to GSDL. This implies that a significant portion of the population suffers from infection with parasites, many of whom experience minimal gastrointestinal symptoms.