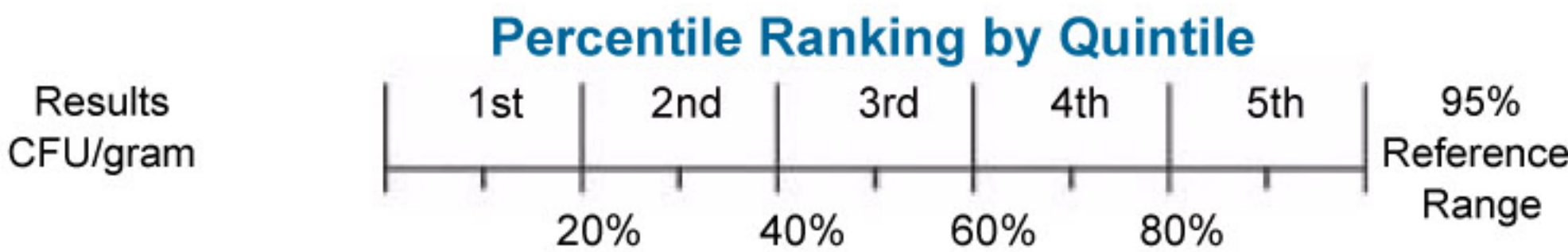


Date Collected: 6/9/13  
 Date Received: 6/12/13  
 Report Date: 6/26/13

**2105 GI Effects® Microbial Ecology Profile - Stool**

Methodology: DNA Analysis, GC/MS, Microscopic, Colorimetric, Automated Chemistry, ELISA



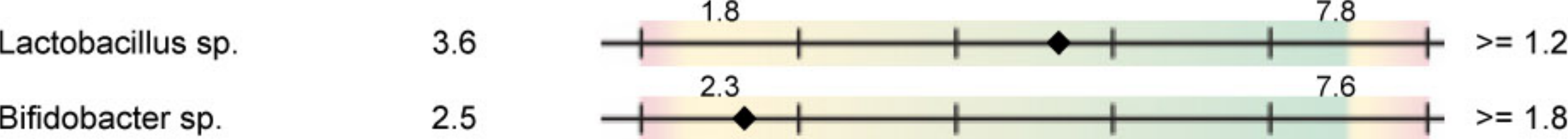
Consistency = Formed/Normal

**Predominant Bacteria** E+007

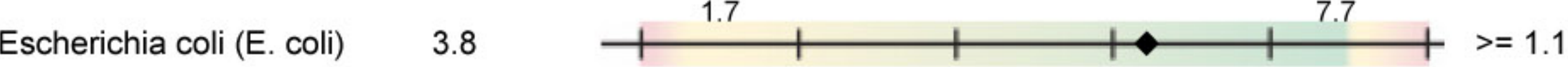
**Obligate anaerobes**



**Facultative anaerobes**



**Obligate aerobes**



**Opportunistic Bacteria**

No clinically significant amounts.

**Units and Reference Ranges**

Organisms are detected by DNA analysis. One colony forming unit (CFU) is equivalent to one bacterium. Each genome detected represents one cell, or one CFU. Results are expressed in scientific notation, so an organism reported as 2.5 E7 CFU/gram is read as 25 million colony forming units per gram of feces. The cutoff for significance of Opportunistic Bacteria has been set at 1.0E+ 005 (100,000). These are levels above which clinically significant growth may be present. Rather than reporting semi-quantitative +1 to +4 levels, the new methodology provides full quantitative analysis.

**Predominant Bacteria** play major roles in health. They provide colonization resistance against potentially pathogenic organisms, aid in digestion and absorption, produce vitamins and SCFA's, and stimulate the GI immune system. DNA probes allow detection of multiple species (sp.) within a genus, so the genera that are reported cover many species.

**Opportunistic Bacteria** may cause symptoms and be associated with disease. They can affect digestion and absorption, nutrient production, pH and immune state. Antibiotic sensitivity tests will be performed on all opportunistic bacteria found, although clinical history is usually considered to determine treatment since the organisms are not generally considered to be pathogens.



*Date Collected:* 6/9/13  
*Date Received:* 6/12/13  
*Report Date:* 6/26/13

## 2105 GI Effects® Microbial Ecology Profile - Stool

**Methodology:** DNA Analysis, GC/MS, Microscopic, Colorimetric, Automated Chemistry, ELISA

## Pathogenic Bacteria

95%

## Reference

Helicobacter pylori	<0.01	<=1.0E+005
E. coli 0157:H7	<0.01	<=1.0E+005
Clostridium difficile	<0.01	<=1.0E+005
Campylobacter sp.	<0.01	<=1.0E+005

## Yeast/Fungi

Expected

Value

Saccharomyces sp.

**+2 => 1000 pg DNA/g specimen**

Neg

## Yeast/Fungi

Yeast overgrowth has been linked to many chronic conditions, in part because of antigenic responses in some patients to even low rates of yeast growth. Potential symptoms include diarrhea, headache, bloating, atopic dermatitis, and fatigue. Positives are reported as +1, +2, +3 or +4 indicating >100, >1000, >10000 or >100000 pg DNA/g.

## ***Parasites***

Expected

Value

No Ova or Parasites

## Parasites

Parasite infections are a major cause of non-viral diarrhea. Symptoms may include constipation, gas, bloating, increased allergy response, colitis, nausea, and distention.

### ***Adiposity Index***

Phylum	Count	95% CI	Significance
Firmicutes	59	[38, 80]	$\leq 80$
Bacteroidetes	41	[20, 62]	$\geq 20$

The **Adiposity Index** is derived by using DNA probes that detect multiple genera of the phyla Firmicutes and Bacteroidetes. Abnormalities of these phyla may be associated with increased caloric extraction from food.

### Drug Resistance Genes

aacA, aphD	Neg	gyrB, ParE	Neg
mecA	Neg	PBP1a, 2B	Neg
vanA, B, and C	Neg		

## Drug Resistance Genes

aacA, aphD - Gentamycin, Kanamycin, and Tobramycin  
mecA - Methicillin  
VanA, vanB, vanC - Vancomycin and Teicoplanin  
GyrB, ParE - Ciprofloxacin and later quinolones  
PBP1a, PBP2B - Penicillin

Decisions involving diagnosis and treatment are the responsibility of the clinician.





## 2155 GI Effects® Sensitivity Fungi Profile - Stool

Methodology: DNA Analysis, ELISA

### Pharmaceuticals

	Sensitive	Resistant
1. Amphotericin	S	
2. Fluconazole		R
3. Itraconazole		R
4. Ketoconazole	S	
5. Nystatin	S	

Fungal growth suppression is measured in a liquid growth medium where bacterial growth is suppressed and specific antifungal agents are introduced before incubation. In contrast to the older isolation and culture techniques, such universal culturing more closely approximates the actions of antifungals in the complex milieu of the colon.

### Botanicals

	Sensitive	Resistant
6. 5-Hydroxy-1,4-naphthoquinone Black Walnut	S	
7. Alliin Garlic	S	
8. Arbutin Uva Ursi		R
9. Artemisinin Wormwood		R
10. Berberine Goldenseal	S	
11. Caprylic acid Octanoic acid	S	
12. Carvacrol Oregano	S	
13. Oleuropein Olive Leaf		R
14. Quinic Acid Cats Claw	S	
15. Thymol Oil of Thyme		R
16. Undecylenic acid Undecylenic acid		R

Agents marked as **"Sensitive"** cause effective fungal growth suppression. Those antifungal agents are candidates for suppressing the growth of fungi and yeasts in the patient's colon. The results apply to all organisms reported under **"Yeast/Fungi."**

Agents indicated as **"Resistant"** have low effectiveness and can increase the risk of inducing drug resistant organisms. If all tested agents are **"Resistant,"** synergistic mixtures of antifungal agents may be effective.

For Botanical sensitivity testing the active ingredients are tested and an example of the available source is shown.

Sensitivities are not performed on **"Pathogens"** or **"Parasites"** because they do not grow in culture under normal laboratory conditions. Standard protocols are generally used for treatment of pathogens and parasites.