

Stool Chemistries

Order: 999999-9999



Client #: 999999

Doctor: Sample Doctor, MD
Doctors Data Inc
123 Main St.
St. Charles, IL 60174 USA

Patient: Sample Patient

Id: 999999

Age: 72 **DOB:** 01/01/1954

Sex: Female

Sample Collection

Date Collected

Date Received

Date Reported

Date/Time

06/28/2026

07/01/2026

07/07/2026

Digestion / Absorption	Result	Unit	L	WRI	H	Reference Interval
Elastase	>500	µg/g				> 200
Fat Stain	None					None – Moderate
Carbohydrates [†]	Negative					Negative
Inflammation	Result	Unit	L	WRI	H	Reference Interval
Lactoferrin	0.7	µg/mL				< 7.3
Lysozyme*	292	ng/mL				≤ 500
Calprotectin	<10	µg/g				< 80
Immunology	Result	Unit	L	WRI	H	Reference Interval
Secretory IgA*	52.0	mg/dL				30 – 275
Short Chain Fatty Acids	Result	Unit	L	WRI	H	Reference Interval
% Acetate [‡]	71	%				50 – 72
% Propionate [‡]	6.3	%				11 – 25
% Butyrate [‡]	21	%				11 – 32
% Valerate [‡]	2.3	%				0.8 – 5.0
Butyrate [‡]	2.1	mg/mL				0.8 – 4.0
Total SCFA's [‡]	9.9	mg/mL				5.0 – 16.0
Intestinal Health Markers	Result	Unit	L	WRI	H	Reference Interval
pH	7.0					5.8 – 7.0
Occult Blood	Negative					Negative
β-glucuronidase*	2240	U/h*g				2800 – 8000
Macroscopic Appearance	Result	Unit				Reference Interval
Color	Brown					Brown
Consistency	Soft					Soft

Notes:

RI= Reference Interval, L (blue)= Low (below RI), WRI (green)= within RI, Yellow= moderately outside RI, L or H, H (red)= High (above RI)

*This test was developed and its performance characteristics determined by Doctor's Data Laboratories in a manner consistent with CLIA requirements. The U. S. Food and Drug Administration (FDA) has not approved or cleared this test; however, FDA clearance is not currently required for clinical use. The results are not intended to be used as a sole means for clinical diagnosis or patient management decisions.

†This test has been modified from the manufacturer's instructions and its performance characteristics determined by Doctor's Data Laboratories in a manner consistent with CLIA requirements.

‡This test was developed and its performance characteristics determined by Doctor's Data Laboratories in a manner consistent with CLIA requirements. The U.S. Food and Drug Administration (FDA) has not approved or cleared this test; however, FDA clearance is not currently required for clinical use.

Methodology: Turbidimetric immunoassay, Microscopy, Colorimetric, Elisa, Gas Chromatography, Guaiac, Enzymatic, Macroscopic Observation

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Chemistry Information:

- **Elastase** findings can be used for assessing pancreatic exocrine function and insufficiency.
- **Fat Stain:** Microscopic determination of fecal fat using Sudan IV staining is a qualitative procedure utilized to assess fat absorption and to detect steatorrhea.
- **Carbohydrates:** The presence of reducing substances in stool specimens can indicate carbohydrate malabsorption.
- **Lactoferrin** and **Calprotectin** are reliable markers for differentiating organic inflammation (IBD) from functional symptoms (IBS) and for management of IBD. Monitoring levels of fecal lactoferrin and calprotectin can play an essential role in determining the effectiveness of therapy, are good predictors of IBD remission, and can indicate a low risk of relapse.
- **Lysozyme** is an enzyme secreted at the site of inflammation in the GI tract and elevated levels have been identified in IBD patients.
- **Secretory IgA** (sIgA) is secreted by mucosal tissue and represents the first line of defense of the GI mucosa and is central to the normal function of the GI tract as an immune barrier. Elevated levels of sIgA have been associated with an upregulated immune response.
- **Short chain fatty acids (SCFAs):** SCFAs are the end product of the bacterial fermentation process of dietary fiber by beneficial flora in the gut and play an important role in the health of the GI as well as protecting against intestinal dysbiosis. Lactobacilli and bifidobacteria produce large amounts of short chain fatty acids, which decrease the pH of the intestines and therefore make the environment unsuitable for pathogens, including bacteria and yeast. Studies have shown that SCFAs have numerous implications in maintaining gut physiology. SCFAs decrease inflammation, stimulate healing, and contribute to normal cell metabolism and differentiation. Levels of **Butyrate** and **Total SCFA** in mg/mL are important for assessing overall SCFA production, and are reflective of beneficial flora levels and/or adequate fiber intake.
- **pH:** Fecal pH is largely dependent on the fermentation of fiber by the beneficial flora of the gut.
- **Occult blood:** A positive occult blood indicates the presence of free hemoglobin found in the stool, which is released when red blood cells are lysed.
- **β-glucuronidase** is an enzyme that breaks the tight bond between glucuronic acid and toxins in the intestines. The binding of toxins in the gut is protective by way of blocking their absorption and facilitating excretion.



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Short Chain Fatty Acids (SCFAs)

The total concentration and/or percentage distribution of the primary short chain fatty acids (SCFAs) are abnormal in this specimen. Beneficial bacteria that ferment non-digestible soluble fiber produce SCFAs that are pivotal in the regulation of intestinal health and function. Restoration of microbial abundance and diversity, and adequate daily consumption of soluble fiber and polyphenols can improve SCFA status.

The primary SCFAs butyrate, propionate and acetate are produced by predominant commensal bacteria via fermentation of soluble dietary fiber and intestinal mucus glycans. Key producers of SCFAs include *Faecalibacterium prausnitzii*, *Akkermansia muciniphila*, *Bacteroides fragilis*, *Bifidobacterium*, *Clostridium* and *Lactobacillus* spp. The SCFAs provide energy for intestinal cells, and regulate the actions of specialized mucosal cells that produce anti-inflammatory and antimicrobial factors, mucins that constitute the mucus barriers, and gut active peptides that facilitate appetite regulation and euglycemia. The SCFAs also contribute to a more acidic and anaerobic microenvironment that disfavors dysbiotic bacteria and yeast. Abnormal SCFAs may be associated with dysbiosis (including insufficiency dysbiosis), compromised intestinal barrier function (intestinal permeability) and inappropriate immune and inflammatory conditions.

"Seeding" with supplemental probiotics may contribute to improved production and status of SCFAs, but it is imperative to "feed" the beneficial microbes. Sources of soluble fiber that are available to the microbes include chick peas, beans, lentils, oat and rice bran, fructo- and galacto- oligosaccharides, and inulin.

β-glucuronidase

β-glucuronidase (β-G) is an enzyme that breaks the tight bond between glucuronic acid and toxins in the intestines. The liver and intestine bind toxins, steroid hormones and some dietary components to glucuronic acid. That is a protective process that limits absorption and enterohepatic resorption of toxins, and enhances excretion. A high level of activity of β-G in the gut is not desirable. A low level of β-G activity is not known to be of any direct clinical consequence.

β-glucuronidase is produced by the intestinal epithelium and many species of intestinal bacteria. Observational studies have indicated a correlation between high β-G activity and certain cancers, but a definitive causal relationship has not been established. Higher levels of β-G have been associated with higher circulating estrogens and lower fecal excretion of estrogens in premenopausal women. A potential dietary carcinogen derived from grilled/smoked meat and fish induces high β-G activity and prolongs internal exposure to the toxin in an experimental animal model.

Diet and intestinal bacterial imbalance modulate β-G activity. High fat, high protein and low fiber diets are associated with higher β-G activity compared to vegetarian or high soluble fiber diets. Higher β-G may be associated with an imbalanced intestinal microbiota profile. Some major bacterial producers of fecal β-G include *Bifidobacterium*, *Lactobacillus*, *Escherichia coli*, *Clostridium*, *Bacteroides fragilis* and other *Bacteroides* spp., *Mediterraneibacter gnavus*, and species that belong to the genera *Staphylococcus* and *Eubacterium*.

Low β-G activity is an indicator of abnormal metabolic activity among the intestinal microbiota that may be influenced by dietary extremes, diminished abundance and diversity of the intestinal microbiota, or heavy probiotic and/or prebiotic supplementation. A low fat, low meat and high fiber diet, such as consumed by strict vegetarians, may be benignly associated with lower β-G activity compared to a typical "Western diet." High-end consumption of soluble fiber (e.g. inulin) and supplementation with *Lactobacillus acidophilus* may be inconsequentially associated with lower fecal β-G.