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## Calprotectin, Fecal

**TEST: 123255** CPT: 83993

**Expected Turnaround Time** 3 - 6 days  
Turnaround time is defined as the usual number of days from the date of pickup of a specimen for testing to when the result is released to the ordering provider. In some cases, additional time should be allowed for additional confirmatory or additional reflex tests. Testing schedules may vary.

**Related Information** • [Lactoferrin, Fecal, Quantitative](#)

**Related Documents** For more information, please view the literature below.

[Bowel Disorders Evaluation Rule-out Cascade: Applying Exclusionary Criteria to Assist Diagnosis](#)

• [Sample Report](#)

### SPECIMEN REQUIREMENTS

**Specimen** Stool (unpreserved, random)

**Volume** 1 g

**Minimum Volume** 0.5 g

**Container** Clean screw-capped plastic vial

**Collection** Do **not** contaminate outside of container; do **not** overfill container. Loose stools

are acceptable.

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Storage Instructions	Stool specimens should be received by the laboratory within 10 days of collection. Samples are stable for four days before testing at 2°C to 8°C. Freeze at -20°C if samples will not be tested within four days. Stable frozen up to one year from collection. Temperature should not exceed 30°C during shipment.
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Causes for Rejection	Serum or plasma received; stool contaminated with urine; specimen older than 10 days of collection before tested; samples taken from diapers unless portion taken has not been in contact with diaper material; preserved stool received
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### TEST DETAILS

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Use	An in vitro diagnostic to aid in the diagnosis of inflammatory bowel disease (IBD), Crohn's disease, and ulcerative colitis, and to differentiate IBD from irritable bowel syndrome (IBS) in conjunction with other clinical and laboratory findings.
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Limitations	<ul style="list-style-type: none"><li>• False-negative results could occur in patients who have granulocytopenia due to bone marrow depression.</li><li>• Some patients who are taking NSAIDs will have elevations in their fecal calprotectin levels.</li><li>• Results may not be clinically applicable to children younger than two years old, who have mildly increased calprotectin levels.</li><li>• Patients with IBD fluctuate between active (inflammatory) and inactive stages of the disease. These stages must be considered when using the calprotectin test.</li><li>• The use of proton pump inhibitors (PPIs), colitis, and diverticular disease may also lead to elevated calprotectin levels. Patients affected by untreated celiac disease may occasionally show elevated calprotectin values.</li><li>• Other intestinal ailments, including many gastrointestinal infections and colorectal cancer, can result in elevated levels of calprotectin. These specimens will test positive with this test. Consequently, a diagnosis of active IBD cannot be established solely on the basis of a positive result with this test.</li><li>• Fecal calprotectin is an indicator of neutrophilic presence in the stool and is not specific for IBD.</li></ul>
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## Methodology Chemiluminescence

Reference  
Interval

See table.

Calprotectin Concentration	Interpretation	Follow-up
<16–50 µg/g	Normal	None
>50–120 µg/g	Borderline	Reëvaluate in 4 to 6 weeks
>120 µg/g	Abnormal	Repeat as clinically indicated

Additional  
Information

Various types of organic disease in the gastrointestinal tract will cause damage to the intestinal lining (mucosa layer). Such damage may vary from increased permeability of the mucosa to inflammation, which may be toxic or chemotactic (ie, they stimulate leukocytes, in particular polymorphonuclear granulocytes [PMNs] to migrate into the gut lumen where they release their contents, including antimicrobial substances like calprotectin). This protein constitutes about 60% of total proteins in the cytoplasm of PMN and can be estimated in small, random stool samples even after storage for seven days at ambient temperature. The concentration of calprotectin in stool reflects the number of PMNs migrating into the gut lumen.

Calprotectin is a calcium- and zinc-binding protein produced by PMNs, monocytes, and squamous epithelial cells, except those in normal skin. After binding calcium, it can resist degradation by leukocytic and bacterial enzymes. By competing with different enzymes for limited local amounts of zinc, calprotectin may inhibit many zinc-dependent enzymes and thereby kill microorganism or animal and human cells in culture.

Calprotectin can be detected even in small (<1 g) random stool samples. Furthermore, organic diseases of the bowel give a strong fecal calprotectin signal (ie, elevations are often five to several thousand times the upper reference in healthy individuals indicating intestinal inflammation). Patients with organic or functional abdominal disorders may have similar symptoms, and clinical examination alone may not be sufficient to support a specific diagnosis. Additionally, the calprotectin test has been demonstrated to be a marker of inflammatory bowel disease in both children and adult patients.

Inflammatory bowel disease (IBD) (eg, ulcerative colitis and Crohn's disease), may appear from early childhood to late adulthood, and the diagnosis is often delayed due to vague symptoms or reluctance to perform endoscopy and biopsy.

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CPT Statement/Profile Statement

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