

CLIA

Calprotectin: a powerful endogenous biomarker of intestinal inflammation

Inflammatory
& Tumour Markers

Calprotectin is a calcium- and zinc-binding protein complex predominantly found in neutrophils and monocytes. When the intestinal mucosa is inflamed, massive neutrophil migration and activation lead to the release of calprotectin into the gut lumen and, consequently, into faeces.

Because calprotectin is resistant to bacterial degradation in stool, it remains stable at room temperature and serves as a robust non-invasive marker of gut inflammation.

Unlike exogenous tracers or invasive procedures, calprotectin is a body-derived molecule whose elevated levels in stool signal neutrophil-mediated gut inflammation. This makes it an efficient tool for monitoring gut health without the invasiveness of endoscopy. It is particularly useful for repeated assessments, monitoring remission/relapse in IBD, and guiding clinical decision-making.

The global incidence of **Inflammatory Bowel Disease (IBD)** — encompassing Crohn's disease and ulcerative colitis — has been steadily **increasing over the past decades**, particularly in newly industrialised regions of Asia, South America, and Eastern Europe.

Recent estimates suggest that **more than 7 million people worldwide** are affected, with annual incidence rates ranging from **6–30 cases per 100,000 inhabitants** in Western countries and showing a **rapid upward trend** in developing nations due to changing lifestyles, diet, and microbiome-related factors.

This growing burden underscores the importance of **non-invasive biomarkers such as faecal calprotectin** for early diagnosis, disease monitoring, and healthcare cost reduction.

Clinical significance & applications

- Faecal calprotectin (FC) is strongly correlated with endoscopic activity in **Inflammatory Bowel Disease (IBD)** — both **Ulcerative Colitis** and **Crohn's Disease** — and is widely used to differentiate between inflammatory and functional gastrointestinal disorders.
- The marker is increasingly being researched beyond gastroenterology, with levels in faeces or plasma being studied in **renal disease, autoimmune disorders and systemic inflammation**.



CAUSE

- Neutrophil migration into gut mucosa & neutrophil activation (release of calprotectin).
- Stable marker in stool (resistant to degradation).
- Functional GI disorder (e.g. IBS) rather than inflammatory disease.



EFFECT / CLINICAL RELEVANCE

- Elevated faecal calprotectin indicates active intestinal inflammation (e.g. IBD).
- Non-invasive monitoring of disease activity and treatment response.
- Normal or low calprotectin levels may help avoid invasive diagnostics.

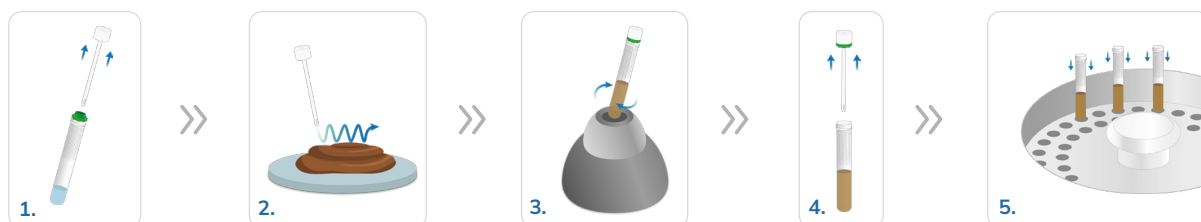
Your Laboratory Solutions for Calprotectin

Calprotectin CLIA Test (Chemiluminescent Immunoassay)

A fully automated quantitative method for measuring calprotectin in faeces using CLIA technology:

- ✓ High sensitivity and precision, suitable for high-throughput clinical laboratories.
- ✓ Provides quantitative data for monitoring disease progression, response to therapy, or mucosal healing in IBD.

Stool specimen collection and preparation



1. Take the sample dilution vial. Remove the sampling stick by unscrewing the white cap.
2. Insert the stick in up to 4 different points of the sample.
3. Shake the sample dilution vial, which contains diluent and sample, in order to obtain a good dispersion. Vortex for up to 120 seconds. Once the sample is dissolved, centrifuge the tube at 1,000-3,000 rpm for 1 minute to deposit the particulate matter at the bottom.
4. Remove the white cap and the green spacer by unscrewing them.
5. Load the sample vials into the analyser.



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Quantification of faecal calprotectin is one of the most widely used parameters in the analysis of inflammatory processes which affect the distal gastrointestinal tract.

Product specifications

Sensitivity (%)	95 ⁽¹⁾
Specificity (%)	98.3 ⁽¹⁾

⁽¹⁾ Results obtained by comparison with similar products available on the market.

References	Description
CLP000	Calprotectin Ag Quantitative (kit 100 det.)
CLP001	Calprotectin Ag Quantitative (kit 200 det.)
CLPCal	Calprotectin Ag Calibration set (one point)
VFE-001	Universal Faecal Sample Vial kit (100 vials).



Non-invasive
diagnostic



Proprietary
analyser required



Low
operational
costs



Ease of use and
interpretation



Immediate
results

certest

Certest Biotec, S.L.
Pol. Industrial Río Gállego II · Calle J, Nº1
50840, San Mateo de Gállego, Zaragoza (Spain)

Tel. (+34) 976 520 354
sales@certest.es
www.certest.es

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