

## Circulating calprotectin - the power to assess inflammation #3/2024



We are witnessing a growing global demand for circulating calprotectin, underscoring its recognition as a valuable biomarker in detection and assessment of inflammation and inflammatory response to infections.

In response to this increased interest, we have expanded our international partnerships and are pleased to welcome new routine users of the Gentian GCAL® Calprotectin Immunoassay worldwide.

In this newsletter, we are excited to share the latest updates on circulating calprotectin and our GCAL® assay, with a focus on its critical role in rheumatology and the continues interest in calprotectin in intensive care units (ICU).

### Circulating Calprotectin (S100A8/A9) – the key indicator of inflammation

Calprotectin in plasma and serum is a highly sensitive biomarker for the early detection of inflammation, providing valuable insights into both infectious and non-infectious inflammatory conditions. Elevated calprotectin levels reflect the extent of inflammation, making it a critical tool for clinicians in assessing inflammatory responses in the ED and ICU, but also in autoinflammatory conditions such as rheumatoid arthritis (RA) and juvenile idiopathic arthritis (JIA), where ongoing inflammation plays a key role in disease progression.

### EULAR/PReS recommends use of calprotectin in diagnosis of Still's disease

The European Alliance of Associations for Rheumatology (EULAR) and The Paediatric Rheumatology European Society (PReS) has highlighted calprotectin as one of the new biomarkers strongly recommended in diagnosis of Still's disease (formerly known as systemic JIA and adult-onset Still's disease).

Diagnosis of Still's disease is challenging in patient presenting with fever of unknown origin and differentiation from other causes are crucial for diagnosis. A recent [cohort study](#), including 1110 paediatric patients, reported elevated calprotectin in Still's patients compared with other diagnoses (including infections and autoinflammatory diseases), showing highest accuracy compared to other markers like ferritin, procalcitonin and IL-18.

Read the updated EULAR/PReS recommendations here: <https://pubmed.ncbi.nlm.nih.gov/39317417/>

## Circulating calprotectin: Advancing rheumatology care

Gentian has participated in the Paediatric Rheumatology European Society (PReS) conference and the German Rheumatology Congress (DGRh 2024) in September, where we highlighted advancements in calprotectin testing. Next, we are looking forward to attending the 14th Central European Congress of Rheumatology (CECR) in Ljubljana, to further discuss how calprotectin provides valuable insights into the patient's inflammation status using a single standard blood test.

By incorporating calprotectin testing into routine clinical practice, rheumatologists gain reliable information about disease activity at crucial decision points, such as during treatment adjustments and monitoring remission. The significance of this testing is especially pronounced in paediatric rheumatology, where precise and sensitive monitoring of inflammation activity is essential for effective patient care.



## Siemens Healthineers' Plasma Proteins Science Day

### – Virtual Event November 7<sup>th</sup>

For this event, Siemens Healthineers has brought together experts to share insights on plasma protein testing, with one session highlighting circulating calprotectin in rheumatic diseases. Prof. Dr. Marija Jelušić, Head of the Department of Paediatric Rheumatology, Immunology and Allergology at University of Zagreb and Chair of the PReS Vasculitis Working Party, will discuss clinical applications and clinical routine of serum calprotectin in both adult and paediatric patients with autoimmune and autoinflammatory conditions like rheumatoid arthritis, Still's disease, vasculitis, and juvenile idiopathic arthritis (JIA).

Learning objectives of the lecture:

1. Understand the Role of Calprotectin as a Biomarker in Pediatric and Adult Rheumatic Diseases
2. Recognize the Clinical Applications of Calprotectin in Diagnosis, Monitoring, and Prognosis

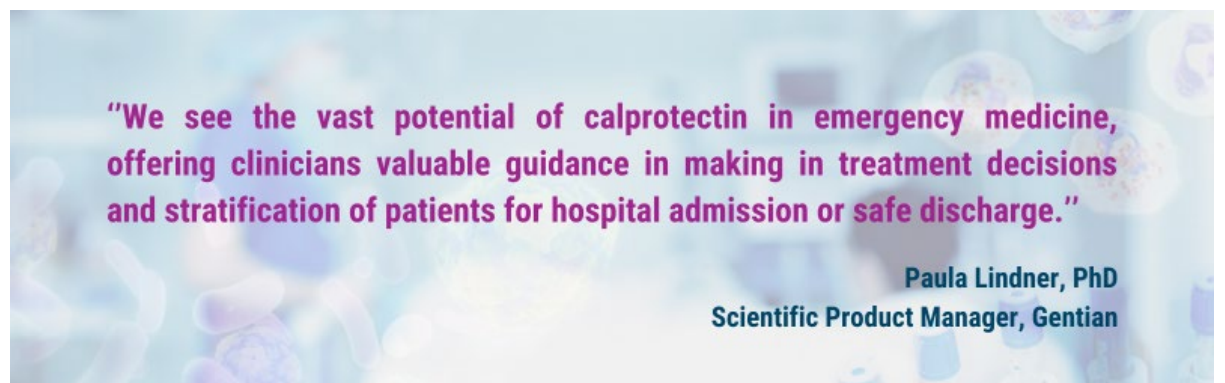
## Value of calprotectin in sepsis – Publication nominated for the Lorentz Eldjarn Prize Competition for Best Publication

The Lorentz Eldjarn Prize Competition for Best Publication took place at the XXXIX Nordic Congress in Clinical Chemistry in Stockholm, where a study conducted in collaboration with Prof. Anders Larsson from Akademiska Hospital, Uppsala, was nominated as one of three finalists.

The nominated study, titled “Calprotectin is Superior to Procalcitonin as a Sepsis Marker and Predictor of 30-Day Mortality in Intensive Care Patients,” was presented by Prof. Larsson. The study was performed in severely ill patients admitted to intensive care unit (ICU) with the aim to compare performance of calprotectin and procalcitonin (PCT) in diagnosis of sepsis and prediction of mortality.

The results showed that calprotectin, measured at ICU admission, successfully distinguished sepsis patients from those with other severe conditions such as trauma or cancer, while PCT was not able to distinguish between septic and non-septic patients. Additionally, calprotectin levels were significantly lower in survivors, proving superior to PCT in predicting 30-day mortality.

Prof. Larsson highlighted the role of neutrophils in the inflammatory response to infection and particularly the role of calprotectin which is highly abundant in neutrophils and is rapidly released upon neutrophil activation. He also emphasised the need for fast and easily available assays for measurement of calprotectin, which is required for use of this biomarker in acute decisions and management of patients with severe infections and sepsis.



**“We see the vast potential of calprotectin in emergency medicine, offering clinicians valuable guidance in making in treatment decisions and stratification of patients for hospital admission or safe discharge.”**

**Paula Lindner, PhD  
Scientific Product Manager, Gentian**

## SEPSIS Awareness month

September is Sepsis Awareness Month, highlighting the dangers of sepsis, a life-threatening condition where the body’s response to infection harms its own tissues and organs. Early detection and intervention are key to preventing severe outcomes.

Elevated calprotectin levels can predict clinical deterioration and mortality in septic patients, enhancing traditional risk scoring. Early risk stratification in the emergency department helps identify high-risk patients and guide treatment decisions, including ICU transfers. This makes calprotectin a sensitive early biomarker and an ideal tool for assessing the risk of severe infections and sepsis.

## GCAL® - Plasma and serum calprotectin

The GCAL® assay is intended for quantitative determination of calprotectin in plasma and serum as an aid in detection and assessment of inflammation and inflammatory response to infections. GCAL® is a Particle-Enhanced Turbidimetric Immunoassay (PETIA) that can be applied on a wide range of automated clinical chemistry analysers. Specifically using avian antibodies in this test, results in the distinct benefit avoiding common interference (namely rheumatoid factor and HAMA antibodies).

GCAL® is the first available (since 2019) turbidimetric assay for circulating calprotectin. It is CE-marked and IVDR certified, in addition to other regional registrations.

All kit components are ready to use with calibrator and dedicated controls. Additionally, the reagent kit is available in two different sizes, accommodating the requirements of both smaller laboratories and high-volume routine users.



Get in touch: [marketing@gentian.com](mailto:marketing@gentian.com) - [www.gentian.com](http://www.gentian.com)

*This newsletter may contain information about products that are not registered for use in your country of residence and may not comply with applicable laws or regulations in that country. We do not take any responsibility for accessing such information in those circumstances.*