

## Product Information

# Calprotectin, human recombinant

Heterodimer of fusion tagged S100A9 and S100A8

**SAE0198**

## Product Description

Calprotectin is a calcium-binding and zinc-binding protein that belongs to the S100 family. It is a heterodimer protein that is composed of S100A8 and S100A9 subunits.<sup>1</sup> The protein is expressed in myeloid cells and in circulating monocytes and neutrophils, where it accounts for 60% of the cytosolic protein content.

Calprotectin has been found to play a major role in inflammation and the immune response by activation of the NF- $\kappa$ B pathway via TLR4 and AGER.<sup>2</sup> Its antimicrobial activity has been postulated to involve chelation of zinc.<sup>3</sup> High concentrations of calprotectin have been found and serve as a biomarker in such conditions as rheumatoid, cystic fibrosis, inflammatory bowel disease and in Crohn's disease.<sup>4</sup> A meta-analysis has identified calprotectin as a potential biomarker for COVID-19.<sup>5</sup>

This recombinant human calprotectin is a heterodimer composed of tagged versions of both the S100A8 and S100A9 subunits:

- A 6xHis tag is added to the N-terminus of the S100A8 subunit.
- A 6xHis-SUMO tag is added to the N-terminus of the S100A9 subunit.

This tagged version was found to have enhanced stability compared to untagged versions of calprotectin. The tags can be removed using HRV-3C protease (Cat. Nos. SAE0045 or SAE0110).

The product is lyophilized from a 0.2  $\mu$ m filtered solution that contains 12.5 mM Tris, pH 8.0, 150 mM NaCl, and 1 mM DTT.

## Reagent

Purity:  $\geq$  90% (SDS-PAGE)

Endotoxin:  $\leq$  1.00 EU/ $\mu$ g

## Activity measurement

The biological activity is determined by its ability to inhibit the growth of human foreskin fibroblasts. The ED<sub>50</sub> is defined as the effective concentration of Calprotectin that inhibit 50% of cell growth.<sup>6</sup>

## Storage/Stability

The product retains activity for at least 2 years when stored lyophilized at -20 °C.

## Preparation Instructions

Reconstitute the contents of the lyophilized vial in DMEM or in PBS to a concentration up to 500  $\mu$ g/mL. Spin down to collect material.

Reconstituted product should be stored in working aliquots at -20 °C. Do not store in a frost-free freezer. Avoid freeze-thaw cycles.

## Precautions and Disclaimer

For R&D use only. Not for drug, household, or other uses. Please consult the Safety Data Sheet for information regarding hazards and safe handling practices.

## References

1. Pathirana, W.G.W. *et al.*, *Clin. Biochem. Rev.*, **39(3)**, 77-90 (2018).
2. Atallah, M. *et al.*, *PLoS One*, **7(2)**, e29333 (2012).
3. Sroussi, H.Y. *et al.*, *FEMS Immunol. Med. Microbiol.*, **55(1)**, 55-61 (2009).
4. Guo, Q. *et al.*, *Cell Host Microbe*, **29(2)**, 222-235.e4 (2021).
5. Udeh, R. *et al.*, *J. Clin. Med.*, **10(4)**, 775 (2021).
6. Yui, S. *et al.*, *Biol. Pharm. Bull.*, **26(6)**, 753-760 (2003)

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