

# PRODUCT INFORMATION



## Calreticulin (human, recombinant)

Item No. 42565

### Overview and Properties

**Synonyms:** CAB-63, CaBP3, Calcium-binding Reticuloplasmin, CALR, CALR1, Calregulin, Calsequestrin-like Protein, cC1qR, CRP55, CRT, CRTC, Endoplasmic Reticulum Resident Protein 60, ERp60, FLJ26680, grp60, HACBP, HEL-S-99n, High-affinity Calcium-binding Protein, RO, SSA

**Source:** Recombinant human calreticulin expressed in HEK293 cells

**Amino Acids:** 18-413

**Uniprot No.:** P27797

**Molecular Weight:** 45.99 kDa

**Storage:** -80°C (as supplied)

**Stability:** ≥1 year

**Purity:** ≥90% as determined by SDS-PAGE

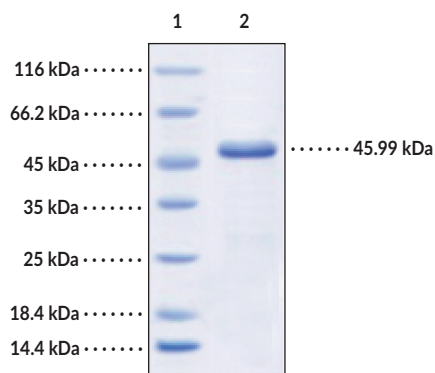
**Endotoxin Testing:** < 1.0 EU/μg, determined by the LAL endotoxin assay

**Protein**

**Concentration:** *batch specific* mg/ml

Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

### Image



Lane 1: MW Markers  
Lane 2: Calreticulin

**SDS-PAGE Analysis of Calreticulin.** Calreticulin has a calculated molecular weight of 45.99 kDa.

**WARNING**  
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

**SAFETY DATA**  
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the [complete](#) Safety Data Sheet, which has been sent via email to your institution.

**WARRANTY AND LIMITATION OF REMEDY**  
Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

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## Description

Calreticulin is a calcium-binding protein involved in intracellular calcium storage and glycoprotein folding, among other processes.<sup>1,2</sup> It is composed of an N-terminal globular N domain, a proline-rich P domain containing a high-affinity, low-capacity calcium-binding site, an acidic C domain containing a low-affinity, high-capacity calcium-binding site, and a C-terminal endoplasmic reticulum retention sequence.<sup>3</sup> Calreticulin is widely expressed and localizes primarily to the lumen of the endoplasmic or sarcoplasmic reticulum in non-muscle or muscle cells, respectively, but is also found at the cell surface, in the extracellular matrix, and in the cytoplasm.<sup>1,3,4</sup> It has a high calcium-binding capacity and is involved in the regulation of intracellular calcium homeostasis, which makes it an integral factor in many calcium-related processes, such as muscle contraction and the cellular stress response.<sup>3,4</sup> Calreticulin also acts as a chaperone for newly synthesized glycoproteins in conjunction with protein disulfide-isomerase A3, also known as ERp57, and calnexin in the calreticulin/calnexin cycle to ensure proper glycoprotein folding.<sup>1</sup> Insertion or deletion mutations in exon 9 of *CALR*, the gene encoding calreticulin, are found in a subset of patients with essential thrombocythemia or primary myelofibrosis and are associated with increased overall survival and a lower risk of thrombosis.<sup>5</sup> Cayman's Calreticulin (human, recombinant) protein consists of 396 amino acids, has a calculated molecular weight of 45.99 kDa, and a predicted N-terminus of Glu18 after signal peptide cleavage.

## References

1. Wang, Q., Groenendyk, J., and Michalak, M. Glycoprotein quality control and endoplasmic reticulum stress. *Molecules* **20**(8), 13689-13704 (2015).
2. Gold, L.I., Eggleton, P., Sweetwyne, M.T., *et al.* Calreticulin: Non-endoplasmic reticulum functions in physiology and disease. *FASEB J.* **24**(3), 665-683 (2010).
3. Michalak, M., Milner, R.E., Burns, K., *et al.* Calreticulin. *Biochem J.* **285**(Pt 3), 681-692 (1992).
4. Wang, W.-A., Groenendyk, J., and Michalak, M. Calreticulin signaling in health and disease. *Int. J. Biochem. Cell Biol.* **44**(6), 842-846 (2012).
5. Klampfl, T., Gisslinger, H., Harutyunyan, A.S., *et al.* Somatic mutations of calreticulin in myeloproliferative neoplasms. *N. Engl. J. Med.* **369**(25), 2379-2390 (2013).

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