

# Human CALR / Calreticulin Protein (His Tag)



Sino Biological  
Biological Solution Specialist

Catalog Number: 13539-H08H

## General Information

### Gene Name Synonym:

cC1qR; CRT; HEL-S-99n; RO; SSA

### Protein Construction:

A DNA sequence encoding the human CALR (P27797) (Met1-Ala413) was expressed with a polyhistidine tag at the C-terminus.

**Source:** Human

**Expression Host:** HEK293 Cells

## QC Testing

**Purity:** > 95 % as determined by SDS-PAGE

### Endotoxin:

< 1.0 EU per  $\mu$ g of the protein as determined by the LAL method

### Stability:

Samples are stable for up to twelve months from date of receipt at -70 °C

**Predicted N terminal:** Glu 18

### Molecular Mass:

The recombinant human CALR consists of 407 amino acids and predicts a molecular mass of 47.4 KDa. It migrates as an approximately 58 KDa band in SDS-PAGE under reducing conditions.

### Formulation:

Lyophilized from sterile PBS, pH 7.4

Normally 5 % - 8 % trehalose, mannitol and 0.01% Tween80 are added as protectants before lyophilization. Specific concentrations are included in the hardcopy of COA. Please contact us for any concerns or special requirements.

## Usage Guide

### Storage:

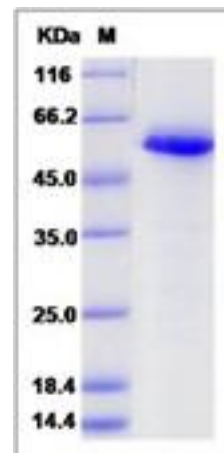
Store it under sterile conditions at -20°C to -80°C upon receiving. Recommend to aliquot the protein into smaller quantities for optimal storage.

**Avoid repeated freeze-thaw cycles.**

### Reconstitution:

Detailed reconstitution instructions are sent along with the products.

## SDS-PAGE:



## Protein Description

Calreticulin is a multifunctional protein. It acts as a main Ca<sup>2+</sup>-binding (storage) protein in the lumen of the endoplasmic reticulum. Calreticulin binds Ca<sup>2+</sup> ions (a second messenger in signal transduction), rendering it inactive. The Ca<sup>2+</sup> is bound with low affinity, but high capacity, and can be released on a signal. Located in storage compartments associated with the endoplasmic reticulum, calreticulin also binds to misfolded proteins and prevents them from being exported from the endoplasmic reticulum to the golgi apparatus. The amino terminus of calreticulin interacts with the DNA-binding domain of the glucocorticoid receptor and prevents the receptor from binding to its specific glucocorticoid response element. Calreticulin reduces the binding of androgen receptor to its hormone-responsive DNA element and inhibits androgen receptor and retinoic acid receptor transcriptional activities in vivo, as well as retinoic acid-induced neuronal differentiation. Therefore, calreticulin acts as a significant modulator of the regulation of gene transcription by nuclear hormone receptors.

## References

1. Michalak M, *et al.* (2002) Calreticulin in cardiac development and pathology. *Biochim Biophys Acta.* 1600(1-2):32-7.
2. Chao MP, *et al.* (2010) Calreticulin is the dominant pro-phagocytic signal on multiple human cancers and is counterbalanced by CD47. *Sci Transl Med.* 2(63):63ra94.
3. Andrin, C, *et al.* (1998) Interaction between a Ca<sup>2+</sup>-binding protein calreticulin and perforin, a component of the cytotoxic T-cell granules. *Biochemistry.* 37(29):10386-94.

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