

Human Calsequestrin-1 / CASQ1 Protein



Sino Biological Inc.
Biological Solution Specialist

Catalog Number: 13805-HNAE

General Information

Gene Name Synonym:

CASQ; PDIB1; VMCQA; CSQ; CSQ-1; CSQ1; sCSQ

Protein Construction:

A DNA sequence encoding the mature form of human CASQ1 (P31415) (Gln35-Asp396) was expressed with a N-terminal Met.

Source: Human

Expression Host: E. coli

QC Testing

Purity: > 90 % as determined by SDS-PAGE

Endotoxin:

Please contact us for more information.

Stability:

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

Predicted N terminal: Met

Molecular Mass:

The recombinant human CASQ1 consists of 363 amino acids and predicts a molecular mass of 41.8 KDa. It migrates as an approximately 52 KDa band in SDS-PAGE under reducing conditions.

Formulation:

Lyophilized from sterile 50mM Tris, 10% glycerol, pH 7.5.

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:

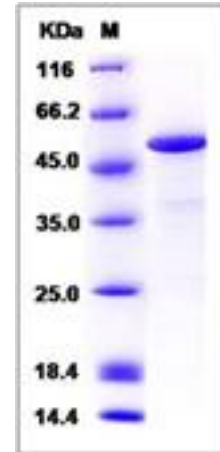
Store it under sterile conditions at -20°C to -80°C upon receiving. Recommend to aliquot the protein into smaller quantities for optimal storage.

Avoid repeated freeze-thaw cycles.

Reconstitution:

Detailed reconstitution instructions are sent along with the products.

SDS-PAGE:



Protein Description

Calsequestrin-1 is an isoform of calsequestrin. Calsequestrin is a calcium-binding protein of the sarcoplasmic reticulum. It helps hold calcium in the cisterna of the sarcoplasmic reticulum after a muscle contraction, even though the concentration of calcium in the sarcoplasmic reticulum is much higher than in the cytosol. Two forms of calsequestrin have been identified: Calsequestrin-2 and Calsequestrin-1. Calsequestrin-1 is found in fast skeletal muscle. The release of calsequestrin-bound calcium (through a calcium release channel) triggers muscle contraction. The active protein is not highly structured, more than 50% of it adopting a random coil conformation. When calcium binds there is a structural change whereby the alpha-helical content of the protein increases from 3 to 11%. Both forms of calsequestrin are phosphorylated by casein kinase 2, but the cardiac form is phosphorylated more rapidly and to a higher degree. Calsequestrin-1 is also secreted in the gut where it deprives bacteria of calcium ions.

References

1. Slupsky JR, *et al.* (1987) Characterization of cardiac calsequestrin. *Biochemistry*. 26(20): 6539-44.
2. Cala SE, *et al.* (1991) Phosphorylation of cardiac and skeletal muscle calsequestrin isoforms by casein kinase II. Demonstration of a cluster of unique rapidly phosphorylated sites in cardiac calsequestrin. *J Biol Chem*. 266(1):391-8.
3. Wang S, *et al.* (1998) Crystal structure of calsequestrin from rabbit skeletal muscle sarcoplasmic reticulum. *Nat Struct Biol*. 5(6):476-83.

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Fax :+86-10-51029969 • Tel:+86-400-890-9989 • <http://www.sinobiological.com>