## Recombinant Human Calsequestrin-1/CASQ1 Protein

## Catalog Number: PKSH030556

Note: Centrifuge before opening to ensure complete recovery of vial contents.

Description	
Species	Human
Source	E.coli-derived Human Calsequestrin-1/CASQ1 protein Gln35-Asp396
Calculated MW	41.8 kDa
Observed MW	52 kDa
Accession	P31415
Bio-activity	Not validated for activity
Properties	
Purity	> 80 % as determined by reducing SDS-PAGE.
Endotoxin	Please contact us for more information.
Storage	Generally, lyophilized proteins are stable for up to 12 months when stored at -20 to -80
	°C. Reconstituted protein solution can be stored at 4-8°C for 2-7 days. Aliquots of
	reconstituted samples are stable at $< -20^{\circ}$ C for 3 months.
Shipping	This product is provided as lyophilized powder which is shipped with ice packs.
Formulation	Lyophilized from sterile 50mM Tris, 10% glycerol, pH 7.5
	Normally 5% - 8% trehalose, mannitol and 0.01% Tween 80 are added as protectants
	before lyophilization.
	Please refer to the specific buffer information in the printed manual.
Reconstitution	Please refer to the printed manual for detailed information.





> 80 % as determined by reducing SDS-PAGE.

## Background

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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.