Data Sheet (Cat.No.TMPY-03438)

TargetMol

Calsequestrin 1 Protein, Human, Recombinant

General Information

Synonyms:	CASQ;PDIB1;VMCQA;calsequestrin 1 (fast-twitch, skeletal muscle)
Protein Construction:	A DNA sequence encoding the mature form of human CASQ1 (P31415) (Gln35-Asp396) was expressed with a N-terminal Met. Predicted N terminal: Met
Species:	Human
Expression Host:	E. coli
Accession:	P31415
Molecular Weight:	41.8 kDa (predicted); 52 kDa (reducing conditions)

QC Testing

Biological Activity:	Activity testing is in progress. It is theoretically active, but we cannot guarantee it. If you require protein activity, we recommend choosing the eukaryotic expression version first.
Purity:	> 80 % as determined by SDS-PAGE
Endotoxin:	Please contact us for more information.
Formulation:	Lyophilized from a solution filtered through a 0.22 μm filter, containing 50 mM Tris, 10% glycerol, pH 7.5. Typically, a mixture containing 5% to 8% trehalose, mannitol, and 0.01% Tween 80 is incorporated as a protective agent before lyophilization.

Preparation and Storage

Reconstitution:

A Certificate of Analysis (CoA) containing reconstitution instructions is included with the products. Please refer to the CoA for detailed information.

Stability & Storage:

It is recommended to store recombinant proteins at -20°C to -80°C for future use. Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

Shipping:

In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

Protein Background

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 5% 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.

Reference

Slupsky JR,et al.(1987) Characterization of cardiac calsequestrin. Biochemistry. 26(20): 6539-44.
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.
Wang S,et al.(1998) Crystal structure of calsequestrin from rabbit skeletal muscle sarcoplasmic reticulum. Nat Struct Biol. 5(6):476-83.

Tel:781-999-4286 E_mail:info@targetmol.com Address:34 Washington Street,Wellesley Hills,MA 02481