Calsequestrin 1 Protein, Human

Cat. No.:	HY-P75459
Synonyms:	Calsequestrin-1; Calmitine; CASQ1; CASQ
Species:	Human
Source:	E. coli
Accession:	P31415 (Q35-D396)
Gene ID:	844
Molecular Weight:	Approximately 52 kDa

PROPERTIES

AA Sequence

Q E G L D F P E Y D G V D R V I N V N A K N Y K N V F K K Y E V L A L L Y H E P
P E D D K A S Q R Q F E M E E L I L E L A A Q V L E D K G V G F G L V D S E K D
A A V A K K L G L T E V D S M Y V F K G D E V I E Y D G E F S A D T I V E F L L
D V L E D P V E L I E G E R E L Q A F E N I E D E I K L I G Y F K S K D S E H Y
K A F E D A A E E F H P Y I P F F A T F D S K V A K K L T L K L N E I D F Y E A
F M E E P V T I P D K P N S E E E I V N F V E E H R R S T L R K L K P E S M Y E
T W E D D M D G I H I V A F A E E A D P D G F E F L E T L K A V A Q D N T E N P
D L S I I W I D P D D F P L L V P Y W E K T F D I D L S A P Q I G V V N V T D A
D S V W M E M D D E E D L P S A E E L E D W L E D V L E G E I N T E D D D D D D D
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Formulation	Lyophilized from a 0.2 μm filtered solution of 50 mM Tris-HCL, 300 mM NaCl, pH 7.4, 10% Glycerol.
Endotoxin Level	<1 EU/μg, determined by LAL method.
Reconsititution	It is not recommended to reconstitute to a concentration less than 100 μg/mL in ddH_2O. For long term storage it is recommended to add a carrier protein (0.1% BSA, 5% HSA, 10% FBS or 5% Trehalose).

DESCRIPTION

Background

Calsequestrin 1, a high-capacity calcium-binding protein, serves as an internal calcium store in muscle. Clusters of acidic residues at the protein surface, particularly at the subunit interface, facilitate the binding of approximately 80 Ca(2+) ions. This protein plays a pivotal role in regulating the release of lumenal Ca(2+) through the calcium release channel RYR1, thereby contributing to the initiation of muscle contraction. Additionally, Calsequestrin 1 acts as a negative regulator of store-operated Ca(2+) entry (SOCE) activity. Existing as a monomer that increases in response to intracellular calcium depletion, it can also form homodimers and higher-order homooligomers, with Ca(2+) ions promoting oligomerization. Calsequestrin 1 interacts with STIM1, preferentially in its monomeric form, and this interaction intensifies following intracellular calcium depletion. Furthermore, it interacts with ASPH and TRDN, highlighting its involvement in diverse cellular processes related to calcium homeostasis.

Caution: Product has not been fully validated for medical applications. For research use only.

Tel: 609-228-6898 Fax: 609-228-5909 E-mail: tech@MedChemExpress.com
Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA