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Product Information

Anti-Calsequestrin-2
produced in rabbit, affinity isolated antibody

Product Number **C3868**

Product Description

Anti-Calsequestrin-2 is produced in rabbit using as immunogen, a synthetic peptide corresponding to amino acids 57–74 of rat calsequestrin-2 (GeneID: 29209), conjugated to KLH. This sequence is highly conserved in human and mouse calsequestrin-2 (single amino acid substitution). This sequence is not found in calsequestrin-1. The antibody is affinity-purified using the immunizing peptide immobilized on agarose.

Anti-Calsequestrin-2 specifically recognizes rat and human calsequestrin-2 (~55 kDa) by immunoblotting. Staining of the calsequestrin-2 band in immunoblotting is specifically inhibited by the calsequestrin-2 immunizing peptide.

Calcium (Ca^{2+}) plays an important role as a messenger in the excitation-contraction coupling process of muscle cells. It is actively transported into the sarcoplasmic reticulum (SR) by the Ca^{2+}-dependent ATPases (SERCAs). It is transiently stored by the Ca^{2+}-binding protein calsequestrin, and subsequently released by inositol 1,4,5-trisphosphate via the Ca^{2+} release channel/ryanodine receptor (RyR) resulting in muscle contraction. Calsequestrin (CS, also known as CSQ), the major Ca^{2+} binding protein in cardiac and skeletal muscle, is a high-capacity, low-affinity Ca^{2+} binding glycoprotein, which functions as an internal Ca^{2+} store in the lumen of the SR.[1,2] In mammals, two forms of the protein exist, calsequestrin-1 (CASQ-1, calmitin, aspartactin, laminin-binding protein) and calsequestrin-2 (CASQ-2), which encode the fast-twitch skeletal muscle and cardiac calsequestrin, respectively. Calsequestrin-1 (60 kDa) is found in the SR's terminal cisternae luminal space of fast skeletal muscle cells.[1-3] Calsequestrin-1 has been identified as a putative autoantigen associated with eye muscle inflammation in Graves' disease.[4,5] Calsequestrin-2 (55 kDa) is found in both SR's terminal cisternae luminal space of both cardiac and in slow skeletal muscle cells.[2,6] Over expression of cardiac calsequestrin is associated with depressed cardiovascular function and hypertrophy.[7] Mutations in CASQ2 are thought to be associated with catecholaminergic polymorphic ventricular tachycardia (CPVT).[8,9]

Reagent

Supplied as a solution in 0.01 M phosphate buffered saline, pH 7.4, containing 15 mM sodium azide as a preservative.

Antibody concentration: ~1.0 mg/ml

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Storage/Stability

Store at –20 °C. For continuous use, store at 2–8 °C for up to one month. For extended storage freeze in working aliquots. Repeated freezing and thawing, or storage in "frost-free" freezers is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilution samples should be discarded if not used within 12 hours.

Product Profile

Immunoblotting: a working concentration of 0.5–1.0 μg/ml is recommended using an extract of rat cardiac muscle (S1 fraction), and using HEK-293T cells expressing human calsequestrin-2.

Note: In order to obtain best results and assay sensitivity in different techniques and preparations we recommend determining optimal working concentrations by titration test.

References

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