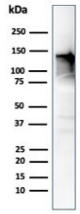
CAD Antibody / Caldesmon CALD1 Isoform-Specific Functional Protein Antibody [clone CALD1/820] (V2942)

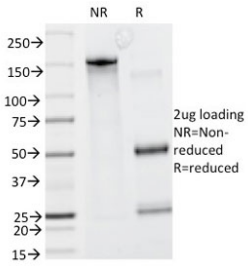
Catalog No.	Formulation	Size
V2942-100UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced) and 0.05% sodium azide	100 ug
V2942-20UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced) and 0.05% sodium azide	20 ug
V2942SAF-100UG	1 mg/ml in 1X PBS; BSA free, sodium azide free	100 ug
V2942IHC-7ML	Prediluted in 1X PBS with 0.1 mg/ml BSA (US sourced) and 0.05% sodium azide; *For IHC use only*	7 ml

Bulk quote request

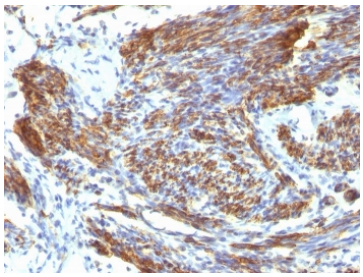
Availability	1-3 business days
Species Reactivity	Human
Format	Purified
Host	Mouse
Clonality	Monoclonal (mouse origin)
Isotype	Mouse IgG1, kappa
Clone Name	CALD1/820
Purity	Protein G affinity chromatography
UniProt	Q05682
Localization	Cytoplasmic
Applications	Immunohistochemistry (FFPE) : 0.25-0.5ug/ml for 30 min at RT Western Blot : 2-4ug/ml
Limitations	This CAD antibody is available for research use only.



CAD Antibody / Caldesmon CALD1 Isoform-Specific Functional Protein Antibody. Western blot analysis of Caldesmon (CALD1) in human ovary tissue lysate. Lane 1: human ovary tissue lysate. A band is detected at approximately 120-150 kDa, consistent with the predicted molecular weight of Caldesmon / CALD1 and representing the high molecular weight h-caldesmon isoform associated with smooth muscle phenotype. CALD1 is known to produce multiple isoforms, with lower molecular weight forms typically observed at approximately 70-80 kDa in non-muscle cells. The observed banding pattern reflects isoform-specific expression and functional diversity of caldesmon across different cellular contexts.



SDS-PAGE analysis of purified, BSA-free CAD antibody (clone CALD1/820) as confirmation of integrity and purity.



CAD Antibody / Caldesmon CALD1 Isoform-Specific Functional Protein Antibody. Immunohistochemistry analysis of Caldesmon (CALD1) in human uterus tissue. FFPE human uterus stained with CAD Antibody, clone CALD1/820, demonstrates strong HRP-DAB brown cytoplasmic staining in smooth muscle cells of the myometrium. The staining highlights interlacing bundles of elongated, spindle-shaped cells with dense filamentous cytoplasmic signal consistent with expression of high molecular weight caldesmon isoforms associated with contractile smooth muscle phenotype. Surrounding stromal and epithelial cells show minimal staining, supporting isoform-dependent localization of CALD1 within smooth muscle structures.

Description

Caldesmon (CALD1) exhibits functional diversity through the expression of multiple isoforms that differ in structure, localization, and biological role. CAD Antibody / Caldesmon CALD1 Isoform-Specific Functional Protein Antibody is used to detect Caldesmon (CALD1), clearly distinguishing it from the unrelated CAD enzyme, and enabling focused investigation of isoform-specific expression patterns and their functional implications.

The two major CALD1 isoform classes, high molecular weight h-caldesmon and low molecular weight l-caldesmon, represent distinct functional states of the protein. High molecular weight isoforms are associated with contractile systems and exhibit strong binding to actin filaments within organized structures, while low molecular weight isoforms are adapted for more dynamic cytoskeletal environments in non-muscle cells.

CAD Antibody, also referred to as Caldesmon antibody or CALD1 antibody, enables analysis of these isoform-specific differences by detecting CALD1 across its structural variants. Isoform distribution often reflects cellular phenotype, with contractile cells favoring high molecular weight forms and proliferative or motile cells exhibiting increased expression of lower molecular weight variants. This isoform-specific functional diversity provides insight into cellular state and behavior.

Structural differences between isoforms influence binding interactions, regulatory capacity, and cellular localization. High molecular weight caldesmon contains extended domains that support stable association with contractile filaments, whereas low molecular weight isoforms lack certain regulatory regions and are more compatible with dynamic cytoskeletal remodeling. These distinctions define the functional diversity of CALD1 across biological systems.

Isoform-specific expression is also linked to developmental stage, differentiation status, and cellular adaptation. Changes in isoform balance can indicate transitions between contractile and non-contractile states, providing a molecular signature

of functional change. This makes caldesmon isoform diversity highly relevant for studies examining cellular plasticity and phenotype regulation.

Due to its ability to capture multiple CALD1 isoforms and reflect functional diversity, CAD Antibody provides a reliable tool for detecting caldesmon expression in studies focused on protein variation, cellular differentiation, and cytoskeletal adaptation. Its association with isoform-specific functional diversity supports investigation of how structural variants contribute to distinct cellular roles.

Application Notes

Optimal dilution of the CAD Antibody / Caldesmon CALD1 Isoform-Specific Functional Protein Antibody should be determined by the researcher.

1. Staining of formalin-fixed tissues requires boiling tissue sections in 10mM Tris with 1mM EDTA, pH 9.0, for 10-20 min followed by cooling at RT for 20 min.
2. The prediluted format is supplied in a dropper bottle and is optimized for use in IHC. After epitope retrieval step (if required), drip mAb solution onto the tissue section and incubate at RT for 30 min.

Immunogen

Recombinant full-length human protein was used as the immunogen for the CAD Antibody / Caldesmon CALD1 Isoform-Specific Functional Protein Antibody.

Storage

Store the CAD antibody at 2-8oC (with azide) or aliquot and store at -20oC or colder (without azide).

Alternate Names

Caldesmon antibody, CALD1 antibody, h-Caldesmon antibody, l-Caldesmon antibody, CALD1 isoform antibody, Caldesmon variant protein antibody