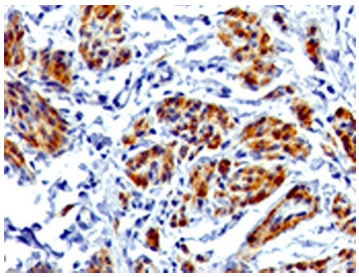
CAD Antibody / Caldesmon CALD1 Contractile Apparatus Regulatory Protein Antibody [clone RMCDN1-1] (V7200)

Catalog No.	Formulation	Size
V7200-100UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced) and 0.05% sodium azide	100 ug
V7200-20UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced) and 0.05% sodium azide	20 ug
V7200SAF-100UG	1 mg/ml in 1X PBS; BSA free, sodium azide free	100 ug
V7200IHC-7ML	Prediluted in 1X PBS with 0.1 mg/ml BSA (US sourced) and 0.05% sodium azide; *For IHC use only*	7 ml

Recombinant RABBIT MONOCLONAL

Bulk quote request

Availability	1-3 business days
Species Reactivity	Human
Format	Purified
Host	Rabbit
Clonality	Recombinant Rabbit Monoclonal
Isotype	Rabbit IgG, kappa
Clone Name	RMCDN1-1
Purity	Protein A affinity chromatography
UniProt	Q05682
Localization	Cytoplasmic
Applications	Immunohistochemistry (FFPE) : 1-2ug/ml for 30 min at RT Prediluted IHC Only Format : incubate for 30 min at RT (1)
Limitations	This CAD antibody is available for research use only.



CAD Antibody / Caldesmon CALD1 Contractile Apparatus Regulatory Protein Antibody. Immunohistochemistry analysis of Caldesmon (CALD1) in human uterus tissue. FFPE human uterus stained with CAD Antibody, a rabbit monoclonal antibody, clone RMCDN1-1, demonstrates strong HRP-DAB brown cytoplasmic staining in smooth muscle cells of the myometrium. The staining highlights elongated, spindle-shaped cells with dense cytoplasmic signal consistent with contractile filament organization and actomyosin-associated structures. Surrounding stromal and epithelial cells show minimal staining, supporting specificity for smooth muscle-associated CALD1 expression. Heat-induced epitope retrieval was performed using Tris-EDTA buffer at pH9.

Description

Caldesmon (CALD1) functions as a central regulator of the contractile apparatus, directly controlling actomyosin interaction and force generation within cells. CAD Antibody / Caldesmon CALD1 Contractile Apparatus Regulatory Protein Antibody is used to detect Caldesmon (CALD1), clearly distinguishing it from the unrelated CAD enzyme involved in pyrimidine biosynthesis, and enabling focused analysis of proteins that govern contractile filament behavior and mechanical output.

Within the contractile machinery, caldesmon operates as a regulatory interface between actin and myosin, modulating cross-bridge formation and the efficiency of contractile force production. This positioning makes CALD1 a defining component of contractile apparatus regulation rather than a passive structural element. By stabilizing actin filaments and controlling myosin engagement, caldesmon directly influences contraction dynamics and cellular tension.

CAD Antibody, also referred to as Caldesmon antibody or CALD1 antibody, is particularly valuable for studying the architecture and regulation of contractile systems. Caldesmon localizes along contractile filaments where it contributes to filament alignment, spacing, and mechanical stability. Its regulatory influence ensures that contractile structures function in a coordinated and controlled manner, especially in cells requiring sustained or finely tuned contraction.

Regulation of CALD1 activity is tightly linked to calcium-calmodulin signaling, which modulates its interaction with actin and alters contractile performance in response to intracellular calcium levels. Through this mechanism, caldesmon serves as a dynamic regulator that integrates biochemical signaling with mechanical output. This contractile apparatus regulation is essential for maintaining proper cellular function under varying physiological conditions.

Beyond classical smooth muscle systems, caldesmon also contributes to contractile-like processes in non-muscle cells, where localized actomyosin activity drives changes in cell shape, adhesion, and mechanical response. In these contexts, CALD1 helps regulate cytoskeletal tension and mechanical adaptation, extending its role in contractile apparatus regulation to a broader range of cellular behaviors.

Due to its direct involvement in actomyosin control and contractile filament regulation, CAD Antibody provides a reliable tool for detecting CALD1 expression in studies focused on cellular mechanics, force generation, and contractile system organization. Its strong association with contractile apparatus regulation supports investigation of how cells generate and control mechanical forces.

Application Notes

Titering of the CAD Antibody / Caldesmon CALD1 Contractile Apparatus Regulatory Protein Antibody may be required for optimal performance.

1. 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

A full length human protein was used as the immunogen for the CAD Antibody / Caldesmon CALD1 Contractile Apparatus Regulatory Protein Antibody.

Storage

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

Alternate Names

Caldesmon antibody, CALD1 antibody, Caldesmon contractile protein antibody, CALD1 actomyosin regulator antibody, h-Caldesmon antibody, Caldesmon filament regulatory antibody