

PRODUCT INFORMATION



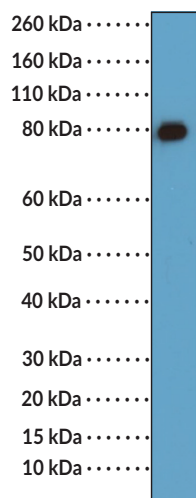
Caldesmon (C-Term) Rabbit Monoclonal Antibody (RM396)

Item No. 32318

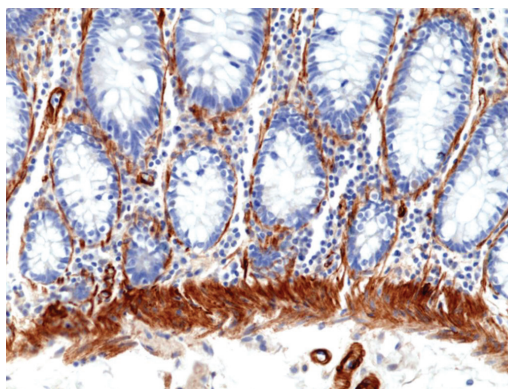
Overview and Properties

Contents:	This vial contains 100 µl of protein A-affinity purified monoclonal antibody.
Synonyms:	CAD1, CALD1
Immunogen:	Peptide from the C-terminal region of human caldesmon
Cross Reactivity:	(+) Caldesmon
Species Reactivity:	(+) Human
Form:	Liquid
Storage:	-20°C (as supplied)
Stability:	≥1 year
Storage Buffer:	PBS, with 50% glycerol, 1% BSA, and 0.09% sodium azide
Clone:	RM396
Host:	Rabbit
Isotype:	IgG
Applications:	Immunohistochemistry (IHC) and Western blot (WB); the recommended starting dilution is 1:100-1:200 for IHC and 1:100-1:1,000 for WB. Other applications were not tested, therefore optimal working concentration/dilution should be determined empirically.

Images



WB of HeLa cell lysate using Caldesmon (C-Term) Rabbit Monoclonal Antibody (RM396) at a dilution of 1:100.



Immunohistochemical staining of formalin-fixed and paraffin-embedded human colon tissue using Caldesmon (C-Term) Rabbit Monoclonal Antibody (RM396) at a dilution of 1:100.

WARNING
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

WARRANTY AND LIMITATION OF REMEDY
Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

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Description

Caldesmon is an actin-binding protein that regulates actin cytoskeleton organization and assembly in smooth muscle and non-muscle cells.^{1,2} It is composed of an N-terminal myosin-binding domain, a central spacer region, and a C-terminal domain that contains binding sites for actin, as well as calmodulin and tropomyosin, and is subject to phosphorylation by a variety of kinases.¹ Alternative splicing of the *CALD1* pre-mRNA produces a heavy isoform, h-CaD, which is expressed by differentiated smooth muscle cells and localizes to actomyosin contractile structures, and a light isoform, l-CaD, which lacks the central spacer region and is expressed in non-muscle cells, where it localizes to podosomes and membrane ruffles.^{1,2} Caldesmon regulates the interaction between actin and myosin, influencing cell contractility and cytoskeletal remodeling in an isoform- and cell-dependent manner.² It inhibits the activity of actomyosin ATPase, an effect that is enhanced by tropomyosin and reversed by Ca²⁺-calmodulin or phosphorylation. Increased caldesmon protein expression has been found in patients with metastatic oral squamous cell carcinoma (OSCC) and is associated with poor prognosis.³ Cayman's Caldesmon (C-Term) Rabbit Monoclonal Antibody (RM396) can be used for immunohistochemistry (IHC) and Western blot (WB) applications.

References

1. Wang, C.L.A. Caldesmon and the regulation of cytoskeletal functions. *Adv. Exp. Med. Biol.* **644**, 250-272 (2008).
2. Lin, J.J.-C., Li, Y., Eppinga, R.D., *et al.* Roles of caldesmon in cell motility and actin cytoskeleton remodeling. *International Review of Cell and Molecular Biology*. Jeon, K.W., editor, 1st edition, *Academic Press* (2009).
3. Sekar, B., Saranyan, R., Nirmal, R.M., *et al.* Caldesmon expression in metastatic and non-metastatic oral squamous cell carcinoma—A mediator of epithelial mesenchymal transition. *J. Orofac. Sci.* **11(2)**, 105-109 (2019).

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