#12503 Store at -20°C

Caldesmon-1 (D5C8D) XP® Rabbit mAb

Cell Signaling TECHNOLOGY®

☐ Small 100 µl (10 western blots)
☐ Petite 40 µl (4 western blots)

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For Research Use Only. Not For Use In Diagnostic Procedures.

Entrez-Gene ID #800
Swiss-Prot Acc. #Q05682

Applications	Species Cross-Reactivity*	Molecular Wt.	Isotype
W, IP, IF-IC	H, M, R, Mk	70-80 non-muscle, 120-150 smooth muscle	Rabbit IgG**
Endogenous			

Storage: Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at –20°C. *Do not aliquot the antibody.*

***Species cross-reactivity is determined by western blot.**

****Anti-rabbit secondary antibodies must be used to detect this antibody.**

Recommended Antibody Dilutions:

Western blotting	1:1000
Immunoprecipitation	1:50
Immunofluorescence (IF-IC)	1:200

For product specific protocols please see the web page for this product at www.cellsignal.com.

Please visit www.cellsignal.com for a complete listing of recommended complementary products.

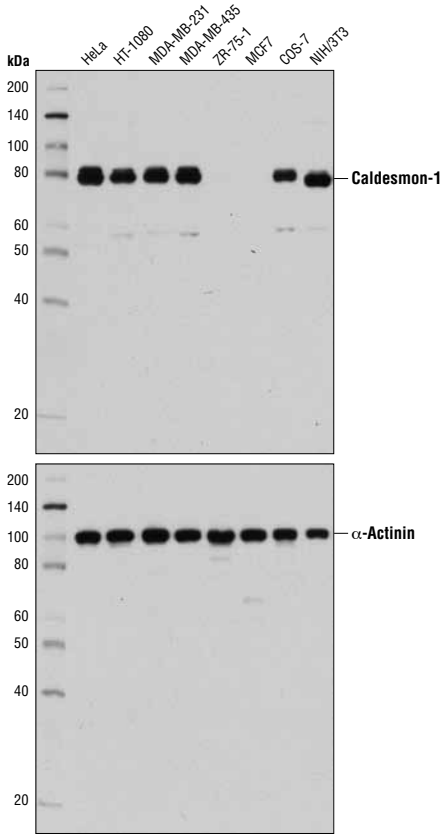
Background: Caldesmon-1 is an actin filament stabilizing protein involved in the regulation of cell contraction. Binding of caldesmon-1 to actin is weakened by phosphorylation and by calmodulin in the presence of calcium. Caldesmon-1 is encoded by a single gene, which is spliced to generate a widely distributed low molecular weight form and a smooth muscle specific high molecular weight form (1,2). Caldesmon-1 is phosphorylated by the cyclin dependent kinase cdc2 and Erk1/2 MAP kinase, both of which prevent the activity of caldesmon-1 (3-5). Phosphorylation of caldesmon-1 by cdc2 is required for passage of cells through mitosis (6). Phosphorylation by Erk1/2 is important in regulating smooth muscle contraction (7). Caldesmon-1 activity may play a role in the formation of podosomes, adhesion complexes associated with the secretion of matrix metalloproteases, invasion, and metastasis (reviewed in 5).

Specificity/Sensitivity: Caldesmon-1 (D5C8D) XP® Rabbit mAb recognizes endogenous levels of total caldesmon-1 protein. Based on sequence homology, the antibody is expected to cross-react with both the smooth muscle and nonmuscle isoforms.

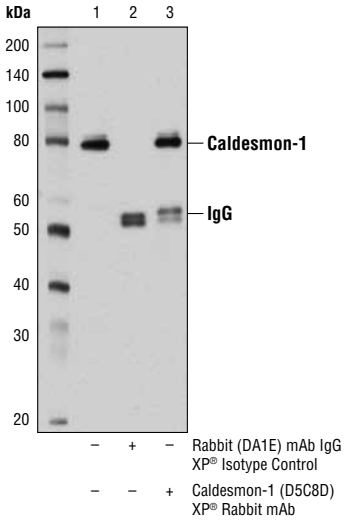
Source/Purification: Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues near the carboxy terminus of human caldesmon-1 protein.

Background References:

(1) Hayashi, K. et al. (1992) *Proc. Natl. Acad. Sci. USA* 89, 12122-12126.
(2) Humphrey, M.B. et al. (1992) *Gene* 112, 197-204.
(3) Yamashiro, S. et al. (1991) *Nature* 349, 169-172.
(4) Mak, A.S. et al. (1991) *J. Biol. Chem.* 266, 6678-6681.
(5) Hai, C.M. and Gu, Z. (2006) *Eur. J. Cell Biol.* 85, 305-309.
(6) Yamashiro, S. et al. (2001) *Mol. Biol. Cell* 12, 239-250.
(7) Hedges, J.C. et al. (2000) *Am. J. Physiol. Cell Physiol.* 278, C718-C7126.



Western blot analysis of extracts from various cell lines using Caldesmon-1 (D5C8D) XP® Rabbit mAb (upper) or α-Actinin (D6F6) XP® Rabbit mAb #6487 (lower).



Immunoprecipitation of caldesmon-1 from HeLa cell extracts using Rabbit (DA1E) mAb IgG XP® Isotype Control #3900 (lane 2) or Caldesmon-1 (D5C8D) XP® Rabbit mAb (lane 3). Lane 1 is 10% input. Western blot analysis was performed using Caldesmon-1 (D5C8D) XP® Rabbit mAb.

IMPORTANT: For western blots, incubate membrane with diluted antibody in 5% w/v nonfat dry milk, 1X TBS, 0.1% Tween-20 at 4°C with gentle shaking, overnight.

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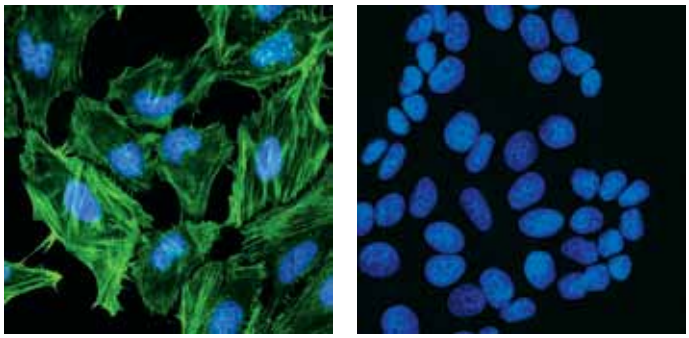
Applications Key: **W**—Western **IP**—Immunoprecipitation **IHC**—Immunohistochemistry **ChIP**—Chromatin Immunoprecipitation **IF**—Immunofluorescence **F**—Flow cytometry **E-P**—ELISA-Peptide

Species Cross-Reactivity Key: **H**—human **M**—mouse **R**—rat **Hm**—hamster **Mk**—monkey **Mi**—mink **C**—chicken **Dm**—D. melanogaster **X**—Xenopus **Z**—zebrafish **B**—bovine **Dg**—dog **Pg**—pig **Sc**—S. cerevisiae **Ce**—C. elegans **Hr**—horse **All**—all species expected Species enclosed in parentheses are predicted to react based on 100% homology.

HeLa **MCF7**



Confocal immunofluorescent analysis of HeLa (left) and MCF7 (right) cells using Caldesmon-1 (D5C8D) XP® Rabbit mAb (green). Blue pseudocolor = DRAQ5® #4084 (fluorescent DNA dye).