

**Caldesmon-1 (D5C8D) XP<sup>®</sup> Rabbit mAb**

**Orders:** 877-616-CELL (2355)  
orders@cellsignal.com

**Support:** 877-678-TECH (8324)

**Web:** info@cellsignal.com  
cellsignal.com

3 Trask Lane | Danvers | Massachusetts | 01923 | USA

**For Research Use Only. Not for Use in Diagnostic Procedures.**

Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W, IP, IF-F, IF-IC	H M R Mk	Endogenous	70-80 nonmuscle, 120-150 smooth muscle	Rabbit IgG	#Q05682	800

**Product Usage Information****Application**

Western Blotting  
Immunoprecipitation  
Immunofluorescence (Frozen)  
Immunofluorescence (Immunocytochemistry)

**Dilution**

1:1000  
1:50  
1:50 - 1:200  
1:200

**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.

**Specificity/Sensitivity**

Caldesmon-1 (D5C8D) XP<sup>®</sup> 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**

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).

**Background References**

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

**Species Reactivity**

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

**Western Blot Buffer**

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

**Applications Key**

**W:** Western Blotting **IP:** Immunoprecipitation **IF-F:** Immunofluorescence (Frozen) **IF-IC:** Immunofluorescence (Immunocytochemistry)

**Cross-Reactivity Key**

**H:** Human **M:** Mouse **R:** Rat **Mk:** Monkey

**Trademarks and Patents**

Cell Signaling Technology is a trademark of Cell Signaling Technology, Inc.

XP is a registered trademark of Cell Signaling Technology, Inc.

All other trademarks are the property of their respective owners. Visit [cellsignal.com/trademarks](http://cellsignal.com/trademarks) for more information.

## Limited Uses

Except as otherwise expressly agreed in a writing signed by a legally authorized representative of CST, the following terms apply to Products provided by CST, its affiliates or its distributors. Any Customer's terms and conditions that are in addition to, or different from, those contained herein, unless separately accepted in writing by a legally authorized representative of CST, are rejected and are of no force or effect.

Products are labeled with For Research Use Only or a similar labeling statement and have not been approved, cleared, or licensed by the FDA or other regulatory foreign or domestic entity, for any purpose. Customer shall not use any Product for any diagnostic or therapeutic purpose, or otherwise in any manner that conflicts with its labeling statement. Products sold or licensed by CST are provided for Customer as the end-user and solely for research and development uses. Any use of Product for diagnostic, prophylactic or therapeutic purposes, or any purchase of Product for resale (alone or as a component) or other commercial purpose, requires a separate license from CST. Customer shall (a) not sell, license, loan, donate or otherwise transfer or make available any Product to any third party, whether alone or in combination with other materials, or use the Products to manufacture any commercial products, (b) not copy, modify, reverse engineer, decompile, disassemble or otherwise attempt to discover the underlying structure or technology of the Products, or use the Products for the purpose of developing any products or services that would compete with CST products or services, (c) not alter or remove from the Products any trademarks, trade names, logos, patent or copyright notices or markings, (d) use the Products solely in accordance with CST Product Terms of Sale and any applicable documentation, and (e) comply with any license, terms of service or similar agreement with respect to any third party products or services used by Customer in connection with the Products.