

#13018 Store at -20C

**S100A4 (D9F9D) Rabbit mAb****Cell Signaling**  
TECHNOLOGY®**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:
WB, IP, IHC-P	H M	Endogenous	12	Rabbit IgG	#P26447	6275

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

Western Blotting  
Immunoprecipitation  
Immunohistochemistry (Paraffin)

**Dilution**

1:1000  
1:50  
1:800

**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.

For a carrier free (BSA and azide free) version of this product see product #48842.

**Specificity / Sensitivity**

S100A4 (D9F9D) Rabbit mAb recognizes endogenous levels of total S100A4 protein.

**Source / Purification**

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Ala54 of human S100A4 protein.

**Background**

Despite their relatively small size (8-12 kDa) and uncomplicated architecture, S100 proteins regulate a variety of cellular processes, such as cell growth and motility, cell cycle progression, transcription, and differentiation. To date, 25 members have been identified, including S100A1-S100A18, trichohyalin, filaggrin, repetin, S100P, and S100Z, making it the largest group in the EF-hand, calcium-binding protein family. Interestingly, 14 S100 genes are clustered on human chromosome 1q21, a region of genomic instability. Research studies have demonstrated that significant correlation exists between aberrant S100 protein expression and cancer progression. S100 proteins primarily mediate immune responses in various tissue types but are also involved in neuronal development (1-4).

Each S100 monomer bears two EF-hand motifs and can bind up to two molecules of calcium (or other divalent cation in some instances). Structural evidence shows that S100 proteins form antiparallel homo- or heterodimers that coordinate binding partner proximity in a calcium-dependent (and sometimes calcium-independent) manner. Although structurally and functionally similar, individual members show restricted tissue distribution, are localized in specific cellular compartments, and display unique protein binding partners, which suggests that each plays a specific role in various signaling pathways. In addition to an intracellular role, some S100 proteins have been shown to act as receptors for extracellular ligands or are secreted and exhibit cytokine-like activities (1-4).

Research studies have shown that S100A4 is overexpressed in highly metastatic cancers, which makes it useful as a marker of tumor progression (5,6) and may serve as a prognostic factor in several cancer types (7-10). S100A4 exerts its function via direct interaction with a number of proteins including P53, P63, nonmuscle myosin IIA, α6β4 integrin, and liprin b1 (11-15). S100A4 is present in the nucleus, cytoplasm and extracellular space. Intracellular and extracellular S100A4 both promote cell migration via interaction with different proteins. Researchers have recently discovered that S100A4 also functions as a neuroprotectant in the peripheral nervous system (16,17).

**Background References**

1. Heizmann, C.W. et al. (2002) *Front Biosci* 7, d1356-68.
2. Donato, R. (2003) *Microsc Res Tech* 60, 540-51.
3. Marenholz, I. et al. (2004) *Biochem Biophys Res Commun* 322, 1111-22.
4. Santamaria-Kisiel, L. et al. (2006) *Biochem J* 396, 201-14.
5. Ismail, N.I. et al. (2008) *Cancer Cell Int* 8, 12.
6. Ismail, T.M. et al. (2010) *J Biol Chem* 285, 914-22.
7. Rudland, P.S. et al. (2000) *Cancer Res* 60, 1595-603.
8. Huang, L.Y. et al. (2011) *World J Gastroenterol* 17, 69-78.
9. Wang, L.J. et al. (2012) *Appl Immunohistochem Mol Morphol* 20, 71-6.
10. Kang, Y.G. et al. (2012) *J Surg Oncol* 105, 119-24.

11. Kriajevska, M.V. et al. (1994) *J Biol Chem* 269, 19679-82.
12. Takenaga, K. et al. (1994) *J Cell Biol* 124, 757-68.
13. Kriajevska, M. et al. (2002) *J Biol Chem* 277, 5229-35.
14. Kim, T.H. et al. (2009) *Mol Cancer Res* 7, 1605-12.
15. van Dieck, J. et al. (2010) *Oncogene* 29, 2024-35.
16. Dmytriyeva, O. et al. (2012) *Nat Commun* 3, 1197.
17. Moldovan, M. et al. (2013) *Mol Med* 19, 43-53.

**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 BSA, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

**Applications Key**

**WB:** Western Blotting **IP:** Immunoprecipitation **IHC-P:** Immunohistochemistry (Paraffin)

**Cross-Reactivity Key**

**H:** human **M:** mouse **R:** rat **Hm:** hamster **Mk:** monkey **Vir:** virus **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  
**GP:** Guinea Pig **Rab:** rabbit **All:** all species expected

**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.