

Smurf1 Antibody

✓ 100 µl
(10 western blots)

Orders ■ 877-616-CELL (2355)
orders@cellsignal.com
Support ■ 877-678-TECH (8324)
info@cellsignal.com
Web ■ www.cellsignal.com

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This product is intended for research purposes only. This product is not intended to be used for therapeutic or diagnostic purposes in humans or animals.

Entrez-Gene ID #57154
Swiss-Prot Acc. #Q9HCE7

Applications W Endogenous	Species Cross-Reactivity* H	Molecular Wt. 81 kDa	Source Rabbit**
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Background: Bone morphogenetic proteins (BMPs) constitute a large family of signaling molecules that regulate a wide range of critical processes including morphogenesis, cell-fate determination, proliferation, differentiation and apoptosis (1,2). BMP receptors are members of the TGF-β family of Ser/Thr kinase receptors. Ligand binding induces multimerization, autophosphorylation and activation of these receptors (3-5). Subsequently, they phosphorylate Smad1 at Ser463 and Ser465 in the carboxy-terminal motif SSXS, as well as Smad5 and Smad8 at their corresponding sites. These phosphorylated Smads dimerize with the collaborating Smad4 and translocate to the nucleus, where the transcription of target genes is stimulated (5).

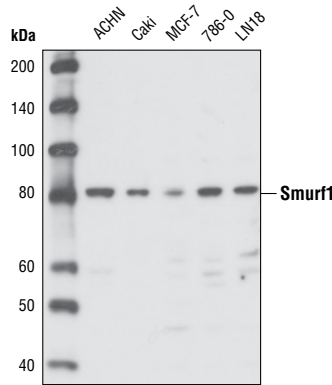
Smurf1, a member of the HECT family of E3 ubiquitin ligases, selectively interacts with BMP pathway Smad effectors, leading to Smad protein ubiquitination and degradation (6). In addition, Smurf1 interacts with the inhibitor Smad, Smad7, the bone-specific transcription factor Runx2/Cbfa1, RhoA and MEKK2 (7-10). Smurf1 negatively regulates osteoblast differentiation and bone formation in vivo (10,11). A related protein, Smurf2, acts more promiscuously, interacting with both BMP and TGF-β pathway Smad proteins (12).

Specificity/Sensitivity: Smurf1 Antibody detects endogenous levels of total Smurf1 protein.

Source/Purification: Polyclonal antibodies are produced by immunizing animals with a synthetic peptide corresponding to a central region within human Smurf1 protein. Antibodies are purified by protein A and peptide affinity chromatography.

Background References:

- (1) Hogan, B.L. et al. (1996) *Genes Dev.* 10, 1580-1594.
- (2) Hoodless, P.A. et al. (1996) *Cell* 85, 489-500.
- (3) Klemm, J.D. et al. (1998) *Annu. Rev. Immunol.* 16, 569-592.
- (4) Kretzschmar, M. et al. (1997) *Genes Dev.* 11, 984-995.
- (5) Whitman, M. (1998) *Genes Dev.* 12, 2445-2462.
- (6) Zhu, H. et al. (1999) *Nature* 400, 687-693.
- (7) Ebisawa, T. et al. (2001) *J. Biol. Chem.* 276, 12477-12480.
- (8) Zhao, M. et al. (2003) *J. Biol. Chem.* 278, 27939-27944.
- (9) Wang, H.R. et al. (2003) *Science* 302, 1775-1779.
- (10) Yamashita, M. et al. (2005) *Cell* 121, 101-113.
- (11) Zhao, M. et al. (2004) *J. Biol. Chem.* 279, 12854-12859.
- (12) Zhang, Y. et al. (2001) *Proc. Natl. Acad. Sci. USA* 98, 974-979.



Western blot analysis of extracts from various cell lines using Smurf1 Antibody.

Storage: Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA and 50% glycerol. 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

For application 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 companion products.

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.