

# Phospho-Smad2 (Ser245/250/255) Antibody



✓ 100 µl  
(10 western blots)

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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.

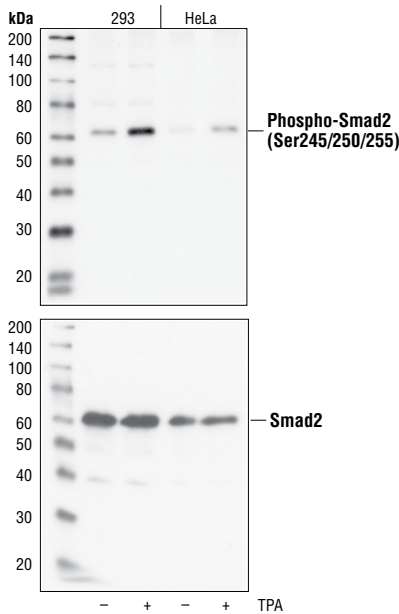
Applications	Species Cross-Reactivity*	Molecular Wt.	Source
W Endogenous	H, M, (R)	60 kDa	Rabbit**

**Background:** Members of the Smad family of signal transduction molecules are components of a critical intracellular pathway that transmits TGF-β signals from the cell surface into the nucleus. Three distinct classes of Smads have been defined: the receptor-regulated Smads (R-Smads), which include Smad1, 2, 3, 5 and 8, the common-mediator Smad (co-Smad), Smad4, and the antagonistic or inhibitory Smads (I-Smads), Smad6 and 7 (1-5). Activated type I receptors associate with specific R-Smads and phosphorylate them on a conserved carboxy terminal SSXS motif. The phosphorylated R-Smad dissociates from the receptor and forms a heteromeric complex with the co-Smad (Smad4), allowing translocation of the complex to the nucleus. Once in the nucleus, Smads can target a variety of DNA binding proteins to regulate transcriptional responses (6-8).

Oncogenic Ras antagonizes TGF-β signaling and inhibits the nuclear accumulation of Smad2 and Smad3, which may be explained through MAP kinase dependent phosphorylation of these Smads (9). Cell stimulation with EGF leads to phosphorylation of Smad2 at a cluster of serine-proline sites within its linker region, including Ser245, 250, and 255 (9).

**Specificity/Sensitivity:** Phospho-Smad2 (Ser245/250/255) Antibody detects endogenous levels of Smad2 only when phosphorylated at serines 245, 250 or 255.

**Source/Purification:** Polyclonal antibodies are produced by immunizing animals with a synthetic phosphopeptide corresponding to residues surrounding serines 245/250/255 of Smad2. Antibodies are purified by protein A and peptide affinity chromatography.



Western blot analysis of extracts from 293 and HeLa cells, untreated or TPA-treated (200 nM for 30 minutes) using Phospho-Smad2 (Ser245/250/255) Antibody (upper) or Smad2 Antibody (lower).

Entrez-Gene ID #4087  
Swiss-Prot Acc. #Q15796

**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

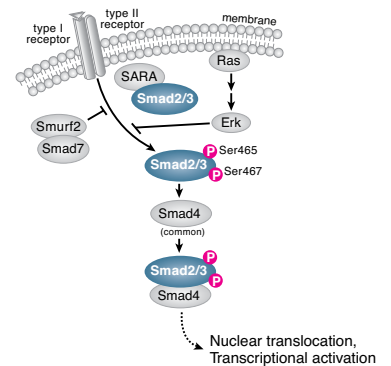
For application specific protocols please see the web page for this product at [www.cellsignal.com](http://www.cellsignal.com).

Please visit [www.cellsignal.com](http://www.cellsignal.com) for a complete listing of recommended companion products.

**Background References:**

- (1) Heldin, C.H. et al. (1997) *Nature* 390, 465-471.
- (2) Attisano, L. and Wrana, J.L. (1998) *Curr. Opin. Cell Biol.* 10, 188-194.
- (3) Derynck, R. et al. (1998) *Cell* 95, 737-740.
- (4) Massague, J. (1998) *Annu. Rev. Biochem.* 67, 753-791.
- (5) Whitman, M. (1998) *Genes Dev.* 12, 2445-2462.
- (6) Wu, G. et al. (2000) *Science* 287, 92-97.
- (7) Attisano, L. and Wrana, J.L. (2002) *Science* 296, 1646-1647.
- (8) Moustakas, A. et al. (2001) *J. Cell Sci.* 114, 4359-4369.
- (9) Kretschmar, M. et al. (1999) *Genes Dev* 13, 804-16.

**TGF-β sub-family ligands: TGF-βs, Activins, Nodals**



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

**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.