

#3108 Store at -20C

## Phospho-SMAD2 (Ser465/467) (138D4) Rabbit mAb



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Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
WB, W-S	H M R Mi	Endogenous	60	Rabbit IgG	#Q15796	4087

### Product Usage Information

#### Application

Western Blotting

Simple Western™

#### Dilution

1:1000

1:50 - 1:250

### 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

Phospho-SMAD2 (Ser465/467) (138D4) Rabbit mAb detects endogenous levels of SMAD2 only when dually phosphorylated at serines 465 and 467, and may detect SMAD3 phosphorylated at the equivalent sites. This antibody does not cross-react with other SMAD-related proteins.

### Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic phosphopeptide corresponding to residues surrounding Ser465/467 of human SMAD2.

### Background

Members of the SMAD family of signal transduction molecules are components of a critical intracellular pathway that transmit 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 9; 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-SMADs dissociate from the receptor and form a heteromeric complex with SMAD4, initiating translocation of the heteromeric SMAD complex to the nucleus. Once in the nucleus, SMADs recruit a variety of DNA binding proteins that function to regulate transcriptional activity (6-8).

Following stimulation by TGF-β, Smad2 and Smad3 become phosphorylated at their carboxy-termini (Ser465/467 on Smad2; Ser423/425 on Smad3) by the receptor kinase TGF-β R1 (9-11). Following phosphorylation, Smad2 and Smad3 form a heteromeric complex with the co-Smad family member Smad4. These complexes are translocated to the nucleus where they bind DNA and regulate gene transcription.

### Background References

1. Heldin, C.H. et al. (1997) *Nature* 390, 465-71.
2. Attisano, L. and Wrana, J.L. (1998) *Curr Opin Cell Biol* 10, 188-94.
3. Derynck, R. et al. (1998) *Cell* 95, 737-40.
4. Massagué, J. (1998) *Annu Rev Biochem* 67, 753-91.
5. Whitman, M. (1998) *Genes Dev* 12, 2445-62.
6. Wrana, J.L. (2000) *Sci STKE* 2000, re1.
7. Attisano, L. and Wrana, J.L. (2002) *Science* 296, 1646-7.
8. Moustakas, A. et al. (2001) *J Cell Sci* 114, 4359-69.
9. Abdollah, S. et al. (1997) *J Biol Chem* 272, 27678-85.
10. Souchelnytskyi, S. et al. (1997) *J Biol Chem* 272, 28107-15.
11. Liu, X. et al. (1997) *Proc Natl Acad Sci U S A* 94, 10669-74.

### 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 **W-S:** Simple Western™

### 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

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