Revision 1

#3101 Store at -20C

# Phospho-Smad2 (Ser465/467) Antibody

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: | UniProt ID: | Entrez-Gene Id: |
|---|---|---|---|---|---|---|
| WB | H M R | Endogenous | 60 | Rabbit | #Q15796 | 4087 |

## Product Usage Information

| Application | Dilution |
|---|---|
| Western Blotting | 1:1000 |

## 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.

## Specificity / Sensitivity

Phospho-Smad2 (Ser465/467) Antibody detects endogenous levels of Smad2 only when dually phosphorylated at Ser465 and Ser467, and may detect phosphorylated Smad3 at its equivalent site. This antibody does not cross-react with other Smad-related proteins.

## Species predicted to react based on 100% sequence homology:

Chicken, Xenopus, Zebrafish

## Source / Purification

Polyclonal antibodies are produced by immunizing animals with a synthetic phosphopeptide corresponding to residues surrounding Ser465/467 of human Smad2. Antibodies are purified by protein A and peptide affinity chromatography.

## 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-beta, Smad2 and Smad3 become phosphorylated at their carboxyl termini by the receptor kinase (serines 465 and 467 on Smad2; serines 423 and 425 on Smad3) by TbetaR-I (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

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## 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

**WB:** Western Blotting

## 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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