Revision 1

#9514 Store at -20C

Phospho-Smad3 (Ser423/425)/Smad1 (Ser463/465) Antibody

Cell Signaling TECHNOLOGY®

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Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
Endogenous	60	Rabbit	#Q15797, #P84022	4086, 4088

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-Smad3 (Ser423/425)/Smad 1 (Ser463/465) Antibody detects endogenous levels of Smad3 only when phosphorylated at serines 423 and 425. The antibody cross-reacts with Smad1 when phosphorylated at serines 463 and 465 and may cross-react with Smad5 and Smad8 when phosphorylated at the equivalent sites. The antibody does not cross-react with Smad2.

Source / Purification

Polyclonal antibodies are produced by immunizing animals with a synthetic phosphopeptide corresponding to residues surrounding Ser423 and Ser425 of human Smad3. 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-β, Smad2 and Smad3 become phosphorylated at their carboxyl termini (Ser465 and 467 on Smad2; Ser423 and 425 on Smad3) by TGF-β Receptor I. Phosphorylated Smad 2/3 can complex with Smad4, translocate to the nucleus and regulate gene expression (9-11).

Background References

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Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

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