

Phospho-Smad1 (Ser463/465)/ Smad5 (Ser463/465)/ Smad9 (Ser465/467) (D5B10) Rabbit mAb (PE Conjugate)

✓ 100 µl
(50 tests)

rev. 12/04/14



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Applications F Endogenous	Species Cross-Reactivity* H, M, R	Isotype Rabbit IgG
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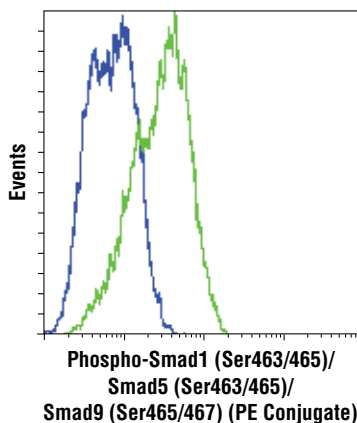
Description: This Cell Signaling Technology antibody is conjugated to phycoerythrin (PE) and tested in-house for direct flow cytometry analysis in human cells. The antibody is expected to exhibit the same species cross-reactivity as the unconjugated Phospho-Smad1 (Ser463/465)/ Smad5 (Ser463/465)/ Smad9 (Ser465/467) (D5B10) Rabbit mAb #13820.

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). They subsequently phosphorylate Smad1 at Ser463 and Ser465 in the carboxy-terminal motif SSXS, as well as Smad5 and Smad9 (Smad8) at their corresponding sites. These phosphorylated Smads dimerize with the coactivating Smad4 and translocate to the nucleus, where they stimulate transcription of target genes (5).

MAP kinases and CDKs 8 and 9 phosphorylate residues in the linker region of Smad1, including Ser206. The phosphorylation of Ser206 recruits Smurf1 to the linker region and leads to the degradation of Smad1 (6). Phosphorylation of this site also promotes Smad1 transcriptional action by recruiting YAP to the linker region (7).

Specificity/Sensitivity: Phospho-Smad1 (Ser463/465)/ Smad5 (Ser463/465)/ Smad9 (Ser465/467) (D5B10) Rabbit mAb (PE Conjugate) recognizes endogenous levels of Smad1 and Smad5 protein when phosphorylated at Ser463/465 and Smad9 (Smad8) protein when phosphorylated at Ser465/467.

Source/Purification: Monoclonal antibody is produced by immunizing animals with a synthetic phosphopeptide corresponding to residues surrounding Ser463/465 of human Smad1 and Smad5 protein.



Flow cytometric analysis of HT-1080 cells, untreated (blue) or treated with Human BMP2 #4697 (50 ng/ml, 30 min; green), using Phospho-Smad1 (Ser463/465)/ Smad5 (Ser463/465)/ Smad9 (Ser465/467) (D5B10) Rabbit mAb (PE Conjugate).

Entrez-Gene ID #4086, 4090
UniProt Acc. #Q15797, Q99717

Storage: Supplied in PBS (pH 7.2), less than 0.1% sodium azide and 2 mg/ml BSA. Store at 4°C. Do not aliquot the antibodies. Protect from light. Do not freeze.

***Species cross-reactivity other than human is determined by western blot using the unconjugated antibody.**

Recommended Antibody Dilutions:

Flow Cytometry 1:50

For product 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 complementary products.

Background References:

- (1) Hogan, B.L. (1996) *Genes Dev* 10, 1580-94.
- (2) Hoodless, P.A. et al. (1996) *Cell* 85, 489-500.
- (3) Klemm, J.D. et al. (1998) *Annu Rev Immunol* 16, 569-92.
- (4) Kretzschmar, M. et al. (1997) *Genes Dev* 11, 984-95.
- (5) Whitman, M. (1998) *Genes Dev* 12, 2445-62.
- (6) Sapkota, G. et al. (2007) *Mol Cell* 25, 441-54.
- (7) Alarcón, C. et al. (2009) *Cell* 139, 757-69.