Technical Data Sheet

Purified Mouse Anti-Smad2/3

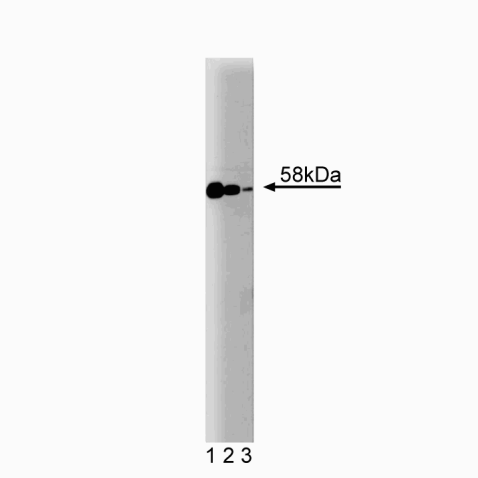
Product Information

Material Number:	**610842**
Size:	50 µg
Concentration:	250 µg/ml
Clone:	18/Smad2/3
Immunogen:	Mouse Smad2 aa. 142-263
Isotype:	Mouse IgG1, κ
Reactivity:	QC Testing: Human Tested in Development: Dog, Mouse, Rat
Target MW:	58 kDa
Storage Buffer:	Aqueous buffered solution containing BSA, glycerol, and ≤0.09% sodium azide.

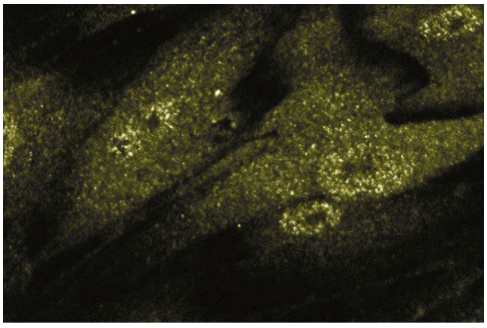
Description

The transforming growth factor β (TGFβ)/activin/BMP family of growth factors plays a diverse and important role in growth, development, and differentiation. These growth factors act through their binding to heteromeric plasma membrane receptor protein kinases which, upon ligand binding, become activated and trigger an intracellular signaling cascade. Specifically, receptor activation induces the translocation of a set of conserved proteins named Smads (Sma- and Mad-related proteins) to the nucleus, resulting in gene activation. Smad2 is a ubiquitously expressed protein of 58 kDa that is phosphorylated and translocated to the nucleus in response to TGFβ, but not BMP. The overall response to TGFβ is growth inhibition. The Smad2 gene is located in chromosome 18q21.1 which is often absent in several human cancers. Furthermore, some missense mutations on the Smad2 gene were identified in colorectal carcinomas, suggesting Smad2 may function as a tumor suppressor in normal cells.

Investigators should note that potential crossreactivity to Smad3 is predicted based on sequence homology of the immunogen, Mouse Smad2 aa. 142-263. In addition, reactivity to mouse Smad2, using siRNA knockdown, has recently been described (Dzwonek *et al*.). Reactivity to canine Smad3 has also been reported using nuclear extracts (Lehman *et al*.).



Western blot analysis of Smad2/3 on Jurkat cell lysate. *Lane 1: 1:500, lane 2: 1:1000, lane 3: 1:2000 dilution of anti-Smad2/3.*



HISM cells grown on microscope slides and stained with Smad2/3 antibody.

Preparation and Storage

Store undiluted at -20°C.

The monoclonal antibody was purified from tissue culture supernatant or ascites by affinity chromatography.

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Application Notes

Application

Western blot	Routinely Tested
Immunofluorescence	Tested During Development
Immunoprecipitation	Reported

Suggested Companion Products

Catalog Number	Name	Size	Clone
611451	Jurkat Cell Lysate	500 µg	(none)
554002	HRP Goat Anti-Mouse Ig	1.0 ml	(none)
554001	FITC Goat Anti-Mouse Ig	0.5 mg	Polyclonal

Product Notices

1. Since applications vary, each investigator should titrate the reagent to obtain optimal results.
2. Please refer to www.bdbiosciences.com/pharmingen/protocols for technical protocols.
3. Caution: Sodium azide yields highly toxic hydrazoic acid under acidic conditions. Dilute azide compounds in running water before discarding to avoid accumulation of potentially explosive deposits in plumbing.
4. Source of all serum proteins is from USDA inspected abattoirs located in the United States.
5. For fluorochrome spectra and suitable instrument settings, please refer to our Multicolor Flow Cytometry web page at www.bdbiosciences.com/colors.

References

Dzwonek J, Preobrazhenska O, Cazzola S, Conidi A, Schellens A, van Dinther M, Stubbs A, Klippel A, Huylebroeck D, ten Dijke P, Verschueren K.. Smad3 is a key nonredundant mediator of transforming growth factor beta signaling in Nme mouse mammary epithelial cells. *Mol Cancer Res.* 2009; 7(8):1342-1353. (Clone-specific: Immunoprecipitation, Western blot)

Eppert K, Scherer SW, Ozcelik H, et al. MADR2 maps to 18q21 and encodes a TGFbeta-regulated MAD-related protein that is functionally mutated in colorectal carcinoma. *Cell.* 1996; 86(4):543-552. (Biology)

Hayes S, Chawla A, Corvera S. TGF beta receptor internalization into EEA1-enriched early endosomes: role in signaling to Smad2. *J Cell Biol.* 2002; 158(7):1239-1249. (Clone-specific: Immunofluorescence, Western blot)

Hocevar BA, Smine A, Xu XX, Howe PH. The adaptor molecule Disabled-2 links the transforming growth factor beta receptors to the Smad pathway. *EMBO J.* 2001; 20(11):2789-2801. (Clone-specific: Immunoprecipitation, Western blot)

Lechleider RJ, de Caestecker MP, Dehejia A, Polymeropoulos MH, Roberts AB. Serine phosphorylation, chromosomal localization, and transforming growth factor-beta signal transduction by human bsp-1. *J Biol Chem.* 1996; 271(30):17617-17620. (Biology)

Lehmann K, Janda E, Pierreux CE, et al. Raf induces TGFbeta production while blocking its apoptotic but not invasive responses: a mechanism leading to increased malignancy in epithelial cells. *Genes Dev.* 2000; 14(20):2610-2622. (Clone-specific: Gel shift, Western blot)

Luo Q, Nieves E, Kzhyshkowska J, Angeletti RH. Endogenous transforming growth factor-beta receptor-mediated Smad signaling complexes analyzed by mass spectrometry. *Mol Cell Proteomics.* 2006; 5(7):1245-1260. (Clone-specific: Immunoprecipitation, Western blot)

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