

# Smurf1 (C-11): sc-518118

## BACKGROUND

Smurf1 and Smurf2 (SMAD ubiquitination regulatory factor-1 and 2) are members of the Hect family of proteins, which also includes the ubiquitin (Ub) E3-type ligases Nedd3 and E6-AP. E3 ligases are involved in the enzymatic reactions of the Ub conjugating pathway, which targets proteins for degradation by the 26S proteasome. Within the Ub pathway, the E3 ligases specifically catalyze the transfer of Ub from the Ub-conjugating enzymes to the individual protein substrate. As an E3 ligase, Smurf1 selectively interacts with receptor-regulated SMADs specific to the BMP pathway in order to trigger their ubiquitination and degradation. Smurf2 interacts with receptor-activated Smads (R-Smads), including Smad1, Smad2, and Smad3, but not Smad4. Although Smurf2 localizes to the nucleus, binding to Smad7 induces its export and its recruitment to the activated TGF $\beta$  receptor, where it causes degradation of Smad7.

## REFERENCES

1. Scheffner, M., et al. 1993. The HPV-16 E6 and E6-AP complex functions as a ubiquitin-protein ligase in the ubiquitination of p53. *Cell* 75: 495-505.
2. Huibregtse, J.M., et al. 1995. A family of proteins structurally and functionally related to the E6-AP ubiquitin-protein ligase. *Proc. Natl Acad. Sci. USA* 92: 2563-2567.
3. Heldin, C.H., et al. 1997. TGF- $\beta$  signalling from cell membrane to nucleus through SMAD proteins. *Nature* 390: 465-471.
4. Candia, A.F., et al. 1997. Cellular interpretation of multiple TGF- $\beta$  signals: intracellular antagonism between activin/BVg1 and BMP-2/4 signaling mediated by Smads. *Development* 124: 4467-4480.
5. Macias-Silva, M., et al. 1998. Specific activation of Smad1 signaling pathways by the BMP7 type I receptor, ALK2. *J. Biol. Chem.* 273: 25628-25636.

## CHROMOSOMAL LOCATION

Genetic locus: SMURF1 (human) mapping to 7q22.1; Smurf1 (mouse) mapping to 5 G2.

## SOURCE

Smurf1 (C-11) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 289-308 of Smurf1 of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG $\gamma_3$  kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Smurf1 (C-11) is available conjugated to agarose (sc-518118 AC), 500  $\mu$ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-518118 HRP), 200  $\mu$ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-518118 PE), fluorescein (sc-518118 FITC), Alexa Fluor<sup>®</sup> 488 (sc-518118 AF488), Alexa Fluor<sup>®</sup> 546 (sc-518118 AF546), Alexa Fluor<sup>®</sup> 594 (sc-518118 AF594) or Alexa Fluor<sup>®</sup> 647 (sc-518118 AF647), 200  $\mu$ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor<sup>®</sup> 680 (sc-518118 AF680) or Alexa Fluor<sup>®</sup> 790 (sc-518118 AF790), 200  $\mu$ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

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## APPLICATIONS

Smurf1 (C-11) is recommended for detection of Smurf1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for Smurf1 siRNA (h): sc-41673, Smurf1 siRNA (m): sc-41674, Smurf1 shRNA Plasmid (h): sc-41673-SH, Smurf1 shRNA Plasmid (m): sc-41674-SH, Smurf1 shRNA (h) Lentiviral Particles: sc-41673-V and Smurf1 shRNA (m) Lentiviral Particles: sc-41674-V.

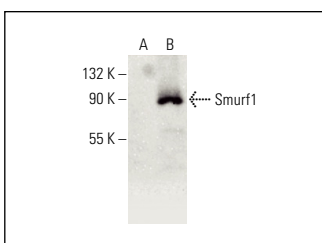
Molecular Weight of Smurf1: 86 kDa.

Positive Controls: Smurf1 (m): 293T Lysate: sc-123668.

## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker<sup>™</sup> Molecular Weight Standards: sc-2035, UltraCruz<sup>®</sup> Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz<sup>®</sup> Mounting Medium: sc-24941 or UltraCruz<sup>®</sup> Hard-set Mounting Medium: sc-359850.

## DATA



Smurf1 (C-11): sc-518118. Western blot analysis of Smurf1 expression in non-transfected: sc-117752 (A) and mouse Smurf1 transfected: sc-123668 (B) 293T whole cell lysates. Detection reagent used: m-IgG $\kappa$  BP-HRP: sc-516102.

## STORAGE

Store at 4° C, \*\*DO NOT FREEZE\*\*. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.