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### SZABO-SCANDIC HandelsgmbH

Quellenstraße 110, A-1100 Wien

T. +43(0)1 489 3961-0

F. +43(0)1 489 3961-7

[mail@szabo-scandic.com](mailto:mail@szabo-scandic.com)

[www.szabo-scandic.com](http://www.szabo-scandic.com)

[linkedin.com/company/szaboscandic](https://www.linkedin.com/company/szaboscandic) 

# Smurf2 (C-5): sc-518164

## 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. Hershko, A. and Ciechanover, A. 1998. The ubiquitin system. *Annu. Rev. Biochem.* 67: 425-479.
4. Zhu, H., et al. 1999. A SMAD ubiquitin ligase targets the BMP pathway and affects embryonic pattern formation. *Nature* 400: 687-693.
5. Lin, X., et al. 2000. Smurf2 is a ubiquitin E3 ligase mediating proteasome-dependent degradation of Smad2 in transforming growth factor- $\beta$  signaling. *J. Biol. Chem.* 275: 36818-36822.

## CHROMOSOMAL LOCATION

Genetic locus: SMURF2 (human) mapping to 17q23.3.

## SOURCE

Smurf2 (C-5) is a mouse monoclonal antibody raised against amino acids 204-253 of Smurf2 of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG $_1$  kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Smurf2 (C-5) is available conjugated to agarose (sc-518164 AC), 500  $\mu$ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-518164 HRP), 200  $\mu$ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-518164 PE), fluorescein (sc-518164 FITC), Alexa Fluor<sup>®</sup> 488 (sc-518164 AF488), Alexa Fluor<sup>®</sup> 546 (sc-518164 AF546), Alexa Fluor<sup>®</sup> 594 (sc-518164 AF594) or Alexa Fluor<sup>®</sup> 647 (sc-518164 AF647), 200  $\mu$ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor<sup>®</sup> 680 (sc-518164 AF680) or Alexa Fluor<sup>®</sup> 790 (sc-518164 AF790), 200  $\mu$ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

Alexa Fluor<sup>®</sup> is a trademark of Molecular Probes, Inc., Oregon, USA

## APPLICATIONS

Smurf2 (C-5) is recommended for detection of Smurf2 of 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 Smurf2 siRNA (h): sc-41675, Smurf2 shRNA Plasmid (h): sc-41675-SH and Smurf2 shRNA (h) Lentiviral Particles: sc-41675-V.

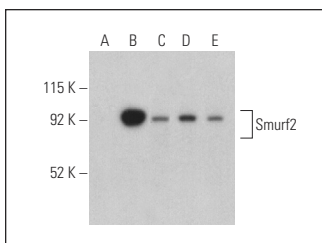
Molecular Weight of Smurf2: 86 kDa.

Positive Controls: MDA-MB-231 cell lysate: sc-2232, DU 145 cell lysate: sc-2268 or WI-38 whole cell lysate: sc-364260.

## RECOMMENDED SECONDARY 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



Smurf2 (C-5): sc-518164. Western blot analysis of Smurf2 expression in non-transfected HEK293T (A), human Smurf2 transfected HEK293T (B), MDA-MB-231 (C), WI-38 (D) and DU 145 (E) 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

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