

# SPRED2 (H-60): sc-98291

## BACKGROUND

SPRED2 (Sprouty-related, EVH1 domain-containing protein 2) is a 418 amino acid protein that localizes to the peripheral membrane and contains one WH1 domain, one Sprouty domain and one KBD domain. Expressed in prostate, skin, liver, salivary gland and small intestine, SPRED2 exists as a homodimer or a heterodimer (with SPRED1) that functions as a tyrosine kinase substrate and acts to inhibit growth-factor-induced MAP kinase (ERK 2) cascade activation. Human SPRED2 is subject to phosphorylation on Tyr 228 or Tyr 231, an event that leads to the ubiquitination and subsequent degradation of SPRED2 by the proteasome. Abnormal expression of SPRED2 is associated with a variety of malignant tumors, suggesting a role for SPRED2 in carcinogenesis. Additionally, disruption of the gene encoding SPRED2 that leads to an activation of the ERK 2 pathway may cause dwarfism.

## REFERENCES

1. Wakioka, T., et al. 2001. Spred is a Sprouty-related suppressor of Ras signalling. *Nature* 412: 647-651.
2. Engelhardt, C.M., et al. 2004. Expression and subcellular localization of Spred proteins in mouse and human tissues. *Histochem. Cell Biol.* 122: 527-538.
3. Nonami, A., et al. 2004. Spred-1 negatively regulates interleukin-3-mediated ERK/mitogen-activated protein (MAP) kinase activation in hematopoietic cells. *J. Biol. Chem.* 279: 52543-52551.
4. Nobuhisa, I., et al. 2004. Spred-2 suppresses aorta-gonad-mesonephros hematopoiesis by inhibiting MAP kinase activation. *J. Exp. Med.* 199: 737-742.
5. Miyoshi, K., et al. 2004. The Sprouty-related protein, Spred, inhibits cell motility, metastasis, and Rho-mediated Actin reorganization. *Oncogene* 23: 5567-5576.
6. King, J.A., et al. 2005. Distinct requirements for the Sprouty domain for functional activity of SPRED proteins. *Biochem. J.* 388: 445-454.
7. Bundschu, K., et al. 2005. Gene disruption of Spred-2 causes dwarfism. *J. Biol. Chem.* 280: 28572-28580.
8. Lock, P., et al. 2006. Spred-2 steady-state levels are regulated by phosphorylation and Cbl-mediated ubiquitination. *Biochem. Biophys. Res. Commun.* 351: 1018-1023.
9. Yoshida, T., et al. 2006. Spreds, inhibitors of the Ras/ERK signal transduction, are dysregulated in human hepatocellular carcinoma and linked to the malignant phenotype of tumors. *Oncogene* 25: 6056-6066.

## CHROMOSOMAL LOCATION

Genetic locus: SPRED2 (human) mapping to 2p14; Spred2 (mouse) mapping to 11 A3.1.

## SOURCE

SPRED2 (H-60) is a rabbit polyclonal antibody raised against amino acids 30-87 mapping near the N-terminus of SPRED2 of human origin.

## PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

SPRED2 (H-60) is recommended for detection of SPRED2 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg 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).

SPRED2 (H-60) is also recommended for detection of SPRED2 in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for SPRED2 siRNA (h): sc-94969, SPRED2 siRNA (m): sc-153784, SPRED2 shRNA Plasmid (h): sc-94969-SH, SPRED2 shRNA Plasmid (m): sc-153784-SH, SPRED2 shRNA (h) Lentiviral Particles: sc-94969-V and SPRED2 shRNA (m) Lentiviral Particles: sc-153784-V.

Molecular Weight of SPRED2: 48 kDa.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 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 goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## SELECT PRODUCT CITATIONS

1. Lock, P., et al. 2006. Spred-2 steady-state levels are regulated by phosphorylation and Cbl-mediated ubiquitination. *Biochem. Biophys. Res. Commun.* 351: 1018-1023.

## 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.



Try **SPRED2 (6G8): sc-517018**, our highly recommended monoclonal alternative to SPRED2 (H-60).