SANTA CRUZ BIOTECHNOLOGY, INC.

SPRED2 (6G8): sc-517018

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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.

STORAGE

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

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

CHROMOSOMAL LOCATION

Genetic locus: SPRED2 (human) mapping to 2p14.

SOURCE

SPRED2 (6G8) is a mouse monoclonal antibody raised against amino acids 120-219 representing partial length SPRED2 of human origin.

PRODUCT

Each vial contains 100 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

SPRED2 (6G8) is recommended for detection of SPRED2 of 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)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

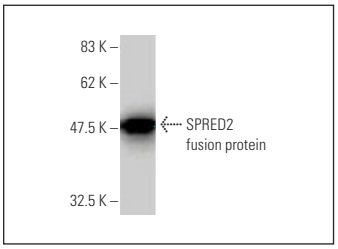
Suitable for use as control antibody for SPRED2 siRNA (h): sc-94969, SPRED2 shRNA Plasmid (h): sc-94969-SH and SPRED2 shRNA (h) Lentiviral Particles: sc-94969-V.

Molecular Weight of SPRED2: 48 kDa.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® 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).

DATA



SPRED2 (6G8): sc-517018. Western blot analysis of human recombinant SPRED2 fusion protein.

SELECT PRODUCT CITATIONS

1. Wang, N.N., et al. 2023. Enhancer variants on chromosome 2p14 regulating SPRED2 and ACTR2 act as a signal amplifier to protect against rheumatoid arthritis. Am. J. Hum. Genet. 110: 625-637.

RESEARCH USE

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