SANTA CRUZ BIOTECHNOLOGY, INC.

SPRED1 (Y-24): sc-130881

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The Power to Question

BACKGROUND

SPRED1 (sprouty-related, EVH1 domain-containing 1), also known as NFLS, is a 444 amino acid protein that contains one KBD domain, one sprouty domain and one WH1 domain. Localized to the cell membrane and to cholesterol-rich membrane raft fractions, SPRED1 functions as a tyrosine kinase that regulates the activity of the ERK (also known as MAP kinase) cascade by inhibiting the growth-factor-mediated activation of ERK. SPRED1 can act independently as a homodimer or can function as a heterodimer with SPRED2 and, in addition to its ability to regulate ERK, is thought to negatively regulate the development of blood cells in bone marrow. Defects in the gene encoding SPRED1 are the cause of neurofibromatosis type 1-like syndrome (NFLS), an autosomal dominant disease that is characterized by multiple cafe-au-lait spots, axillary freckling and macrocephaly.

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. SPRED1 negatively regulates interleukin-3-mediated ERK/mitogen-activated protein (MAP) kinase activation in hematopoietic cells. J. Biol. Chem. 279: 52543-52551.
4. King, J.A., et al. 2005. Distinct requirements for the Sprouty domain for functional activity of SPRED proteins. Biochem. J. 388: 445-454.
5. Nonami, A., et al. 2005. The Sprouty-related protein, SPRED1, localizes in a lipid raft/caveola and inhibits ERK activation in collaboration with caveolin-1. Genes Cells 10: 887-895.
6. 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.
7. Brems, H., et al. 2007. Germline loss-of-function mutations in SPRED1 cause a neurofibromatosis 1-like phenotype. Nat. Genet. 39: 1120-1126.

CHROMOSOMAL LOCATION

Genetic locus: SPRED1 (human) mapping to 15q14.

SOURCE

SPRED1 (Y-24) is a purified rabbit polyclonal antibody raised against a peptide mapping near the N-terminus of SPRED1 of human origin.

PRODUCT

Each vial contains 100 µg IgG in 1.0 ml PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

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

APPLICATIONS

SPRED1 (Y-24) is recommended for detection of SPRED1 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)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (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 SPRED1 siRNA (h): sc-90024, SPRED1 shRNA Plasmid (h): sc-90024-SH and SPRED1 shRNA (h) Lentiviral Particles: sc-90024-V.

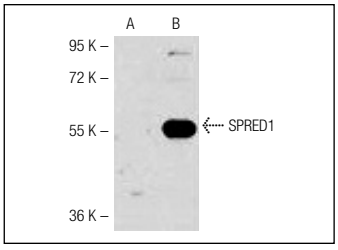
Molecular Weight of SPRED1: 50 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200 or human SPRED1 transfected 293 whole cell lysate.

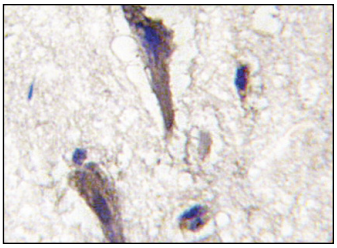
RECOMMENDED SECONDARY REAGENTS

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. 4) Immunohistochemistry: use ImmunoCruz™: sc-2051 or ABC: sc-2018 rabbit IgG Staining Systems.

DATA



SPRED1 (Y-24): sc-130881. Western blot analysis of SPRED1 expression in non-transfected (**A**) and human SPRED1 transfected (**B**) 293 whole cell lysates.



SPRED1 (Y-24): sc-130881. Immunoperoxidase staining of formalin-fixed, paraffin-embedded human brain tissue showing cytoplasmic localization.

RESEARCH USE

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