SANTA CRUZ BIOTECHNOLOGY, INC.

Sprouty 4 (L-17): sc-18607

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Members of the Sprouty family (Sprouty 1-4) are inducible negative regulators of growth factors that act through tyrosine kinase receptors. Mammalian Sprouty homologs share a well conserved cysteine-rich carboxy-terminal domain with their *Drosophila* counterpart. Sprouty proteins are cytoplasmic in unstimulated cells, but in cells stimulated by growth factors they anchor to the plasma membrane by palmitoylation. Sprouty 1 and 2 associate with caveolin-1 in perinuclear and vesicular structures and are phosphorylated on serine residues. Sprouty 2 can associate with c-Cbl, a downregulator of RTK signaling, and inhibit the activities of several growth factors. Unlike the widely expressed Sprouty members 1, 2 and 4, Sprouty 3 expression is restricted to adult brain and testis. Sprouty 4 is a target of the WNT/β-catenin signaling pathway in progenitor cells. In conclusion, members of Sprouty inhibit FGF and VEGF-mediated cell proliferation, suggesting that they may regulate angiogenesis in normal and disease processes.

REFERENCES

1. Lim, J., et al. 2000. Sprouty proteins are targeted to membrane ruffles upon growth factor receptor tyrosine kinase activation. Identification of a novel translocation domain. J. Biol. Chem. 275: 32837-32845.
2. Impagnatiello, M.A., et al. 2001. Mammalian Sprouty-1 and -2 are membrane-anchored phosphoprotein inhibitors of growth factor signaling in endothelial cells. J. Cell Biol. 152: 1087-1098.
3. Ozaki, K., et al. 2001. Erk pathway positively regulates the expression of sprouty genes. Biochem. Biophys. Res. Commun. 285: 1084-1088.
4. Lee, S.H., et al. 2001. Inhibition of angiogenesis by a mouse Sprouty protein. J. Biol. Chem. 276: 4128-4133.
5. Mailleux, A.A., et al. 2001. Evidence that SPROUTY2 functions as an inhibitor of mouse embryonic lung growth and morphogenesis. Mech. Dev. 102: 81-94.

CHROMOSOMAL LOCATION

Genetic locus: SPRY4 (human) mapping to 5q31.3; Spry4 (mouse) mapping to 18 B3.

SOURCE

Sprouty 4 (L-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of Sprouty 4 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.

Blocking peptide available for competition studies, sc-18607 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

APPLICATIONS

Sprouty 4 (L-17) is recommended for detection of Sprouty 4 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).

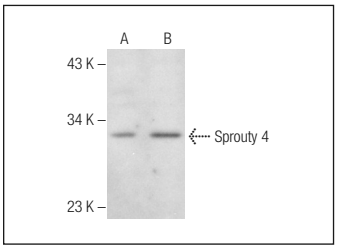
Sprouty 4 (L-17) is also recommended for detection of Sprouty 4 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for Sprouty 4 siRNA (h): sc-41041, Sprouty 4 siRNA (m): sc-41042, Sprouty 4 shRNA Plasmid (h): sc-41041-SH, Sprouty 4 shRNA Plasmid (m): sc-41042-SH, Sprouty 4 shRNA (h) Lentiviral Particles: sc-41041-V and Sprouty 4 shRNA (m) Lentiviral Particles: sc-41042-V.

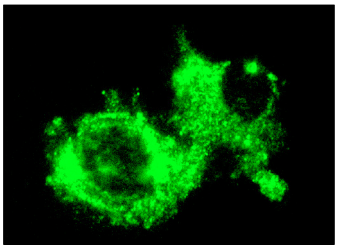
Molecular Weight of Sprouty 4: 33 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203, NTERA-2 cl.D1 whole cell lysate: sc-364181 or Hep G2 cell lysate: sc-2227.

DATA



Sprouty 4 (L-17): sc-18607. Western blot analysis of Sprouty 4 expression in K-562 (**A**) and NTERA-2 cl.D1 (**B**) whole cell lysates.



Sprouty 4 (L-17): sc-18607. Immunofluorescence staining of methanol-fixed Hep G2 cells showing cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Ozaki, K., et al. 2005. Efficient suppression of FGF-2-induced ERK activation by the cooperative interaction among mammalian Sprouty isoforms. J. Cell Sci. 118: 5861-5871.
2. Guerra, C., et al. 2011. Pancreatitis-induced inflammation contributes to pancreatic cancer by inhibiting oncogene-induced senescence. Cancer Cell 19: 728-739.
3. Corless, C.L., et al. 2011. Gastrointestinal stromal tumours: origin and molecular oncology. Nat. Rev. Cancer 11: 865-878.

RESEARCH USE

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

PROTOCOLS

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