

# Sprouty 4 (H-100): sc-30051

## 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 C-terminal domain with their *Drosophila* counterparts. 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 down regulator 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/ $\beta$ -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

- 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.
- 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.
- Ozaki, K., et al. 2001. Erk pathway positively regulates the expression of sprouty genes. *Biochem. Biophys. Res. Commun.* 285: 1084-1088.
- 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.
- Lee, S.H., et al. 2001. Inhibition of angiogenesis by a mouse Sprouty protein. *J. Biol. Chem.* 276: 4128-4133.
- Yizaw, Y., et al. 2001. The C terminus of Sprouty is important for modulation of cellular migration and proliferation. *J. Biol. Chem.* 276: 22742-22747.

## CHROMOSOMAL LOCATION

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

## SOURCE

Sprouty 4 (H-100) is a rabbit polyclonal antibody raised against amino acids 1-100 (deletion 62-77) mapping at the N-terminus of Sprouty 4 of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG in 1.0 ml of 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

Sprouty 4 (H-100) 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  $\mu$ 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 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: Hep G2 cell lysate: sc-2227.

## 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

- Sayed, D., et al. 2008. MicroRNA-21 targets Sprouty2 and promotes cellular outgrowths. *Mol. Biol. Cell* 19: 3272-3282.
- Taniguchi, K., et al. 2009. Suppression of Sproutys has a therapeutic effect for a mouse model of ischemia by enhancing angiogenesis. *PLoS ONE* 4: e5467.
- Rozen, E.J., et al. 2009. Loss of Sprouty1 rescues renal agenesis caused by Ret mutation. *J. Am. Soc. Nephrol.* 20: 255-259.
- Alsina, F.C., et al. 2012. Sprouty4 is an endogenous negative modulator of TrkA signaling and neuronal differentiation induced by NGF. *PLoS ONE* 7: e32087.

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.