

# Sprouty 3 siRNA (h): sc-41039

## 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* 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 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/ $\beta$ -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

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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. Mailleux, A.A., et al. 2001. Evidence that Sprouty 2 functions as an inhibitor of mouse embryonic lung growth and morphogenesis. *Mech. Dev.* 102: 81-94.
5. Lee, S.H., et al. 2001. Inhibition of angiogenesis by a mouse Sprouty protein. *J. Biol. Chem.* 276: 4128-4133.
6. Yigzaw, Y., et al. 2001. The C-terminus of Sprouty is important for modulation of cellular migration and proliferation. *J. Biol. Chem.* 276: 22742-22747.
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## CHROMOSOMAL LOCATION

Genetic locus: SPRY3 (human) mapping to Xq28/Yq12.

## PRODUCT

Sprouty 3 siRNA (h) is a pool of 3 target-specific 19-25 nt siRNAs designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Sprouty 3 shRNA Plasmid (h): sc-41039-SH and Sprouty 3 shRNA (h) Lentiviral Particles: sc-41039-V as alternate gene silencing products.

For independent verification of Sprouty 3 (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-41039A, sc-41039B and sc-41039C.

## STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20° C, avoid contact with RNases and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330  $\mu$ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330  $\mu$ l of RNase-free water makes a 10  $\mu$ M solution in a 10  $\mu$ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

## APPLICATIONS

Sprouty 3 siRNA (h) is recommended for the inhibition of Sprouty 3 expression in human cells.

## SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10  $\mu$ M in 66  $\mu$ l. Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

## GENE EXPRESSION MONITORING

Sprouty 3 (C-2): sc-374593 is recommended as a control antibody for monitoring of Sprouty 3 gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker<sup>™</sup> Molecular Weight Standards: sc-2035, UltraCruz<sup>®</sup> Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz<sup>®</sup> Mounting Medium: sc-24941 or UltraCruz<sup>®</sup> Hard-set Mounting Medium: sc-359850.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Sprouty 3 gene expression knockdown using RT-PCR Primer: Sprouty 3 (h)-PR: sc-41039-PR (20  $\mu$ l, 461 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

## 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) for detailed protocols and support products.