



Shf siRNA (m): sc-153449

BACKGROUND

The SH2 (Src homology 2) domain is a structurally conserved motif that contains two α helices and seven β strands, and is found in a variety of proteins that are involved in signal transduction throughout the cell. Specifically, the SH2 domain targets SH2 domain-containing proteins to tyrosine-phosphorylated sites, an event that can trigger a protein-protein interaction cascade which may ultimately effect gene expression and cellular function. Shb (SH2 domain-containing adapter protein b), Shd (SH2 domain-containing adapter protein d), She (SH2 domain-containing adapter protein e) and Shf (SH2 domain-containing adapter protein f) are SH2 domain-containing proteins that play various roles throughout the cell. Shb is a widely expressed protein that localizes to both the cell membrane and the cytoplasm and plays an important role in signal transduction, mainly by linking activated proteins to downstream signaling targets, thereby propagating a signal cascade. Unlike Shb, Shd and Shf are thought to function as adaptor proteins, the former of which may be involved in apoptotic regulation.

REFERENCES

1. Sadowski, I., et al. 1986. A noncatalytic domain conserved among cytoplasmic protein-tyrosine kinases modifies the kinase function and transforming activity of Fujinami sarcoma virus P130gag-fps. *Mol. Cell. Biol.* 6: 4396-4408.
2. Russell, R.B., et al. 1992. Conservation analysis and structure prediction of the SH2 family of phosphotyrosine binding domains. *FEBS Lett.* 304: 15-20.
3. Welsh, M., et al. 1994. Shb is a ubiquitously expressed Src homology 2 protein. *Oncogene* 9: 19-27.
4. Karlsson, T., et al. 1995. Molecular interactions of the Src homology 2 domain protein Shb with phosphotyrosine residues, tyrosine kinase receptors and Src homology 3 domain proteins. *Oncogene* 10: 1475-1483.
5. Karlsson, T. and Welsh, M. 1996. Apoptosis of NIH/3T3 cells overexpressing the Src homology 2 domain protein Shb. *Oncogene* 13: 955-961.
6. Karlsson, T., et al. 1998. The Src homology 2 domain protein Shb transmits basic fibroblast growth factor- and nerve growth factor-dependent differentiation signals in PC-12 cells. *Cell Growth Differ.* 9: 757-766.
7. Lindholm, C.K., et al. 2000. Shf, a Shb-like adapter protein, is involved in PDGF- α -receptor regulation of apoptosis. *Biochem. Biophys. Res. Commun.* 278: 537-543.
8. Hooshmand-Rad, R., et al. 2000. Platelet-derived growth factor-mediated signaling through the Shb adaptor protein: effects on cytoskeletal organization. *Exp. Cell Res.* 257: 245-254.
9. Rolny, C., et al. 2005. Shb promotes blood vessel formation in embryoid bodies by augmenting vascular endothelial growth factor receptor-2 and platelet-derived growth factor receptor- β signaling. *Exp. Cell Res.* 308: 381-393.

PROTOCOLS

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

CHROMOSOMAL LOCATION

Genetic locus: Shf (mouse) mapping to 2 E5.

PRODUCT

Shf siRNA (m) is a target-specific 19-25 nt siRNA designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Shf shRNA Plasmid (m): sc-153449-SH and Shf shRNA (m) Lentiviral Particles: sc-153449-V as alternate gene silencing products.

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

APPLICATIONS

Shf siRNA (m) is recommended for the inhibition of Shf expression in mouse 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 μ M in 66 μ 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Shf gene expression knockdown using RT-PCR Primer: Shf (m)-PR: sc-153449-PR (20 μ l). 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.