

# ProSAPiP1 siRNA (m): sc-152481

## BACKGROUND

The ProSAP family of proteins contain many protein-protein interaction domains and serve as scaffolding mediators within the post-synaptic density (PSD) of excitatory brain synapses. The PSD is an electron-dense structure underneath the post-synaptic plasma membrane of excitatory synapses that anchors and clusters glutamate receptors opposite to the pre-synaptic neurotransmitter release site. Shank proteins contain PDZ modular domains that coordinate the synaptic localization of ion channels, receptors, signaling enzymes, and cell adhesion molecules. The PDZ domain mediates protein-protein interactions via the recognition of a conserved sequence motif at the C-terminus of their target protein(s). ProSAPiP1 (proline rich synapse associated protein interacting protein 1) is a 673 amino acid protein that interacts with the PDZ domain of Shank 3. ProSAPiP1 expression is brain-specific with highest expression within the cerebellum, hippocampus and cerebral cortex.

## REFERENCES

1. Lim, S., et al. 1999. Characterization of the Shank family of synaptic proteins. Multiple genes, alternative splicing, and differential expression in brain and development. *J. Biol. Chem.* 274: 29510-29518.
2. Tobaben, S., et al. 2000. The G protein-coupled receptor CL1 interacts directly with proteins of the Shank family. *J. Biol. Chem.* 275: 36204-36210.
3. Sala, C., et al. 2001. Regulation of dendritic spine morphology and synaptic function by Shank and Homer. *Neuron* 31: 115-130.
4. Boeckers, T.M., et al. 2002. ProSAP/Shank proteins-a family of higher order organizing molecules of the postsynaptic density with an emerging role in human neurological disease. *J. Neurochem.* 81: 903-910.
5. Park, E., et al. 2003. The Shank family of postsynaptic density proteins interacts with and promotes synaptic accumulation of the  $\beta$  PIX guanine nucleotide exchange factor for Rac1 and Cdc42. *J. Biol. Chem.* 278: 19220-19229.
6. Wendholt, D., et al. 2006. ProSAP-interacting protein 1 (ProSAPiP1), a novel protein of the postsynaptic density that links the spine-associated Rap-Gap (SPAR) to the scaffolding protein ProSAP2/Shank3. *J. Biol. Chem.* 281: 13805-13816.

## CHROMOSOMAL LOCATION

Genetic locus: Ltts3 (mouse) mapping to 2 F1.

## PRODUCT

ProSAPiP1 siRNA (m) 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 ProSAPiP1 shRNA Plasmid (m): sc-152481-SH and ProSAPiP1 shRNA (m) Lentiviral Particles: sc-152481-V as alternate gene silencing products.

For independent verification of ProSAPiP1 (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-152481A, sc-152481B and sc-152481C.

## 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

ProSAPiP1 siRNA (m) is recommended for the inhibition of ProSAPiP1 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  $\mu$ 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.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor ProSAPiP1 gene expression knockdown using RT-PCR Primer: ProSAPiP1 (m)-PR: sc-152481-PR (20  $\mu$ 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.

## PROTOCOLS

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