

SorCS1 siRNA (h): sc-44745

BACKGROUND

There are three sorCS genes that have diverse, partially overlapping functions in the central nervous system. In the developing and mature central nervous system, the homologous SorCS1 and SorCS2 genes and the SorCS3 gene are expressed in a combinatorial, non-overlapping pattern. SorCS proteins show homology to the mosaic receptor SorLA and the neurotensin receptor sortilin, based on a common VPS10 domain, which is the hallmark of the SorCS receptor family. SorCS1 is a type 1 receptor containing a VPS10P domain and a leucine-rich domain. Alternative splicing of human SorCS1 results in four isoforms with different cytoplasmic tails and differential expression in tissues. Human SorCS1 is detected in fetal and infant brain and in fetal retina. Alternative splicing of murine SorCS1 also results in four isoforms. Murine isoform 1 is highly expressed in brain and at lower levels in heart, liver and kidney. It is detected in newborn mouse brain and in adult olfactory bulb and cerebral cortex. Murine isoform 2 is highly expressed in liver and at lower levels in heart, brain, kidney and testis.

REFERENCES

1. Hermey, G., et al. 1999. Identification and characterization of SorCS, a third member of a novel receptor family. *Biochem. Biophys. Res. Commun.* 266: 347-351.
2. Hermey, G., et al. 2001. SorCS1, a member of the novel sorting receptor family, is localized in somata and dendrites of neurons throughout the murine brain. *Neurosci. Lett.* 313: 83-87.
3. Hampe, W., et al. 2001. The genes for the human VPS10 domain-containing receptors are large and contain many small exons. *Hum. Genet.* 108: 529-536.
4. Hermey, G., et al. 2001. Transient expression of SorCS in developing telencephalic and mesencephalic structures of the mouse. *Neuroreport* 12: 29-32.
5. Hermey, G., et al. 2003. Characterization of SorCS1, an alternatively spliced receptor with completely different cytoplasmic domains that mediate different trafficking in cells. *J. Biol. Chem.* 278: 7390-7396.
6. Hermey, G., et al. 2004. The three SorCS genes are differentially expressed and regulated by synaptic activity. *J. Neurochem.* 88: 1470-1476.

CHROMOSOMAL LOCATION

Genetic locus: SORCS1 (human) mapping to 10q25.1.

PRODUCT

SorCS1 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see SorCS1 shRNA Plasmid (h): sc-44745-SH and SorCS1 shRNA (h) Lentiviral Particles: sc-44745-V as alternate gene silencing products.

For independent verification of SorCS1 (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-44745A, sc-44745B and sc-44745C.

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

SorCS1 siRNA (h) is recommended for the inhibition of SorCS1 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 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.

GENE EXPRESSION MONITORING

SorCS1 (E-8): sc-365605 is recommended as a control antibody for monitoring of SorCS1 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 κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker[™] Molecular Weight Standards: sc-2035, UltraCruz[®] Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz[®] Mounting Medium: sc-24941 or UltraCruz[®] Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor SorCS1 gene expression knockdown using RT-PCR Primer: SorCS1 (h)-PR: sc-44745-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.

PROTOCOLS

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