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SorCS1 shRNA (m) Lentiviral Particles: sc-44746-V

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 J. *Biol. Chem.* 278: 7390-7396.

CHROMOSOMAL LOCATION

Genetic locus: Sorcs1 (mouse) mapping to 19 D1.

PRODUCT

SorCS1 shRNA (m) Lentiviral Particles is a pool of concentrated, transduction-ready viral particles containing 3 target-specific constructs that encode 19-25 nt (plus hairpin) shRNA designed to knock down gene expression. Each vial contains 200 μ l frozen stock containing 1.0×10^6 infectious units of virus (IFU) in Dulbecco's Modified Eagle's Medium with 25 mM HEPES pH 7.3. Suitable for 10-20 transductions. Also see SorCS1 siRNA (m): sc-44746 and SorCS1 shRNA Plasmid (m): sc-44746-SH as alternate gene silencing products.

STORAGE

Store lentiviral particles at -80°C . Stable for at least one year from the date of shipment. Once thawed, particles can be stored at 4°C for up to one week. Avoid repeated freeze thaw cycles.

APPLICATIONS

SorCS1 shRNA (m) Lentiviral Particles is recommended for the inhibition of SorCS1 expression in mouse cells.

SUPPORT REAGENTS

Control shRNA Lentiviral Particles: sc-108080. Available as 200 μ l frozen viral stock containing 1.0×10^6 infectious units of virus (IFU); contains an shRNA construct encoding a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA.

GENE EXPRESSION MONITORING

SorCS1 (D-20): sc-32340 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 (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (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) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor SorCS1 gene expression knockdown using RT-PCR Primer: SorCS1 (m)-PR: sc-44746-PR (20 μ l). Annealing temperature for the primers should be $55-60^\circ\text{C}$ and the extension temperature should be $68-72^\circ\text{C}$.

BIOSAFETY

Lentiviral particles can be employed in standard Biosafety Level 2 tissue culture facilities (and should be treated with the same level of caution as with any other potentially infectious reagent). Lentiviral particles are replication-incompetent and are designed to self-inactivate after transduction and integration of shRNA constructs into genomic DNA of target cells.

RESEARCH USE

The purchase of this product conveys to the buyer the nontransferable right to use the purchased amount of the product and all replicates and derivatives for research purposes conducted by the buyer in his laboratory only (whether the buyer is an academic or for-profit entity). The buyer cannot sell or otherwise transfer (a) this product (b) its components or (c) materials made using this product or its components to a third party, or otherwise use this product or its components or materials made using this product or its components for Commercial Purposes.

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