

# Sc1 siRNA (m): sc-153239

## BACKGROUND

Extracellular matrix molecules (ECM) play important roles in influencing cell shape, proliferation and migration during neurogenesis. Sc1 (also designated hevin, Mast9 and ECM2) is a secreted ECM glycoprotein related to SPARC that exhibits anti-adhesive properties. Sc1 and SPARC share sequence similarity in their C-terminus. Sc1 mRNA is highly expressed in the embryonic brain and spinal cord as well as in the adult brain and retina and its expression is both spatially and temporally regulated. This suggests that Sc1 plays an important role in the developing nervous system. Sc1 mRNA levels are induced in different cell populations in the adult forebrain in responding to localized injury. Sc1 mRNA is localized to the distal processes of Bergmann glial cells in the synapse-rich molecular layer of the cerebellum and can facilitate local control of Sc1 protein synthesis, indicating that Sc1 may play roles in synapse formation during development and in synaptic plasticity in the adult. Sc1 co-localizes with the astrocyte marker glial fibrillary acidic protein (GFAP) in the adult rodent brain. Thus, Sc1 is also an astrocyte marker.

## REFERENCES

- McKinnon, P.J., et al. 1996. The exon structure of the mouse Sc1 gene is very similar to the mouse Sparc gene. *Genome Res.* 6: 1077-1083.
- McKinnon, P.J. and Margolskee, R.F. 1996. Sc1: a marker for astrocytes in the adult rodent brain is upregulated during reactive astrogliosis. *Brain Res.* 709: 27-36.
- Mendis, D.B., et al. 2000. Induction of SC1 mRNA encoding a brain extracellular matrix glycoprotein related to SPARC following lesioning of the adult rat forebrain. *Neurochem. Res.* 25: 1637-1644.

## CHROMOSOMAL LOCATION

Genetic locus: Sparc1 (mouse) mapping to 5 E5.

## PRODUCT

Sc1 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 Sc1 shRNA Plasmid (m): sc-153239-SH and Sc1 shRNA (m) Lentiviral Particles: sc-153239-V as alternate gene silencing products.

For independent verification of Sc1 (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-153239A, sc-153239B and sc-153239C.

## 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

Sc1 siRNA (m) is recommended for the inhibition of Sc1 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.

## GENE EXPRESSION MONITORING

SPARCL1 (G-5): sc-514275 is recommended as a control antibody for monitoring of Sc1 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™ Molecular Weight Standards: sc-2035, UltraCruz® 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® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Sc1 gene expression knockdown using RT-PCR Primer: Sc1 (m)-PR: sc-153239-PR (20  $\mu$ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

## SELECT PRODUCT CITATIONS

- Danjo, Y., et al. 2022. Transient astrocytic mGluR5 expression drives synaptic plasticity and subsequent chronic pain in mice. *J. Exp. Med.* 219: e20210989.

## 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.