

# UNC5H1 siRNA (m): sc-63186

## BACKGROUND

The UNC5H family of proteins act as transmembrane receptors for netrin-1 and play a crucial role in axon guidance and migration of neural cells. Additionally, when cleaved by a caspase to produce an intracellular fragment containing a death domain, UNC5H receptors induce apoptosis. This activity is blocked by the binding of netrin-1. In the absence of netrin-1, UNC5H receptors act as tumor suppressors by inhibiting anchorage-independent growth and invasion, but mutation of these receptors provides a potential mechanism for tumorigenicity. The expression of UNC5H receptors is down-regulated in multiple carcinomas, including colorectal, breast, ovary, uterus, stomach, lung and kidney cancers. UNC5H1, also known as UNC5HA (unc-5 homolog A), is a member of the UNC5H family of proteins and is localized to the cell membrane. Three isoforms of UNC5H1 exist due to alternative splicing events.

## REFERENCES

1. Llambi, F., et al. 2001. Netrin-1 acts as a survival factor via its receptors UNC5H and DCC. *EMBO J.* 20: 2715-2722.
2. Komatsuzaki, K., et al. 2002. Modulation of  $G_i\alpha_2$  signaling by the axonal guidance molecule UNC5H2. *Biochem. Biophys. Res. Commun.* 297: 898-905.
3. Thiebault, K., et al. 2003. The netrin-1 receptors UNC5H are putative tumor suppressors controlling cell death commitment. *Proc. Natl. Acad. Sci. USA* 100: 4173-4178.
4. Kruger, R.P., et al. 2004. Mapping netrin receptor binding reveals domains of UNC5 regulating its tyrosine phosphorylation. *J. Neurosci.* 24: 10826-10834.
5. Kuramoto, T., et al. 2004. Rat neurological mutations cerebellar vermis defect and hobble are caused by mutations in the netrin-1 receptor gene UNC5H3. *Brain Res. Mol. Brain Res.* 122: 103-108.
6. Klar, J., et al. 2005. RAR-related orphan receptor A isoform 1 (ROR $\alpha$ 1) is disrupted by a balanced translocation t(4;15)(q22.3;q21.3) associated with severe obesity. *Eur. J. Hum. Genet.* 13: 928-934.

## CHROMOSOMAL LOCATION

Genetic locus: *Unc5a* (mouse) mapping to 13 B1.

## PRODUCT

UNC5H1 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 UNC5H1 shRNA Plasmid (m): sc-63186-SH and UNC5H1 shRNA (m) Lentiviral Particles: sc-63186-V as alternate gene silencing products.

For independent verification of UNC5H1 (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-63186A, sc-63186B and sc-63186C.

## PROTOCOLS

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

UNC5H1 siRNA (m) is recommended for the inhibition of UNC5H1 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 UNC5H1 gene expression knockdown using RT-PCR Primer: UNC5H1 (m)-PR: sc-63186-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.