

## SR-4 siRNA (m): sc-42240

### BACKGROUND

Serotonin (also designated 5-hydroxytryptamine or 5-HT) is a molecule that functions as a neurotransmitter, a hormone and a mitogen, and it is predominantly expressed in the gut, platelets and central nervous system (CNS). In the CNS, Serotonin modulates several processes, including anxiety, sleep, appetite, behavior and drug abuse. In platelets and gut, serotonin plays a major role in cardiovascular function and motility of the gastrointestinal tract, respectively. Serotonin mediates its effects through several of G protein-coupled receptors, designated 5-HT receptors or alternatively SR receptors. SR-3 is a ligand-gated ion channel, whereas all other known serotonin receptor subtypes are G protein-coupled receptors. The gene which encodes SR-3 maps to human chromosome 11q23.2. SR-4 mediates widespread effects in central and peripheral nervous systems. The gene which encodes SR-4 maps to human chromosome 5q32. SR-7 belongs to the superfamily of G protein-coupled receptors. The gene which encodes SR-7 maps to human chromosome 10q23.31.

### REFERENCES

1. Maricq, A.V., et al. 1991. Primary structure and functional expression of the 5-HT<sub>3</sub> receptor, a serotonin-gated ion channel. *Science* 254: 432-437.
2. Kenakin, T.P., et al. 1992. Definition of pharmacological receptors. *Pharmacol. Rev.* 44: 351-362.
3. Ruat, M., et al. 1993. Molecular cloning, characterization and localization of a high-affinity serotonin receptor (5-HT<sub>7</sub>) activating cAMP formation. *Proc. Natl. Acad. Sci. USA* 90: 8547-8551.

### CHROMOSOMAL LOCATION

Genetic locus: Htr4 (mouse) mapping to 18 E1.

### PRODUCT

SR-4 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 SR-4 shRNA Plasmid (m): sc-42240-SH and SR-4 shRNA (m) Lentiviral Particles: sc-42240-V as alternate gene silencing products.

For independent verification of SR-4 (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-42240A, sc-42240B and sc-42240C.

### 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

SR-4 siRNA (m) is recommended for the inhibition of SR-4 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

SR-4 (G-3): sc-376158 is recommended as a control antibody for monitoring of SR-4 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 SR-4 gene expression knockdown using RT-PCR Primer: SR-4 (m)-PR: sc-42240-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

1. Hu, L., et al. 2017. Serotonin 5-HT<sub>6</sub> receptors affect cognition in a mouse model of Alzheimer's disease by regulating cilia function. *Alzheimers Res. Ther.* 9: 76.

### 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.