SANTA CRUZ BIOTECHNOLOGY, INC.

SR-5B siRNA (m): sc-42243

BACKGROUND

SR-5B, also designated 5-hydroxytryptamine (serotonin) receptor 5B (5-HT5B) and G protein-coupled receptor 134 (GPR134), is a receptor for the monoamine ligand serotonin (5-hydroxytryptamine, 5-HT). Serotonin is a neurotransmitter derived from serotonergic neurons in the central nervous system and enterochromaffin cells in the gastrointestinal tract. Serotonin actions are mediated by receptors that influence the biochemistry of depression, anxiety, sexuality and appetite. Rat SR-5B is present in serotonergic neurons in dorsal raphe (DR) and central superior nucleus (CS, median raphe nucleus). DR cell bodies showing SR-5B mRNA expression are abundant in the medial portions of the nucleus. CS coexpression of SR-5B receptor mRNA with serotonin transporter mRNA is high in the intermediate portions of the nucleus. Serotonin receptors include SR-1–7 (5-HT1–7). Subtypes within the SR-1 group include SR-1A, -1B, -1D, -1E and -1F. Subtypes within the SR-2 group include SR-2A, -2B and -2C. Subtypes within the SR-5 group include SR-5A and -5B. SR receptors can couple to G proteins that act on either adenylate cyclase or phospholipase C (PLC). The SR-3 class of receptors are ion channels.

REFERENCES

1. Watts, S.W., et al. 1994. Contractile serotonin-2A receptor signal transduction in guinea pig trachea: importance of protein kinase C and extracellular and intracellular calcium but not phosphoinositide hydrolysis. J. Pharmacol. Exp. Ther. 271: 832-844.
2. Goppelt-Struebe, M., et al. 1998. Signaling pathways mediating induction of the early response genes prostaglandin G/H synthase-2 and egr-1 by serotonin via 5-HT2A receptors. J. Cell. Physiol. 175: 341-347.
3. Barnes, N.M., et al. 1999. A review of central 5-HT receptors and their function. Neuropharmacology 38: 1083-1152.
4. Nebigil, C.G., et al. 2000. Serotonin 2B receptor is required for heart development. Proc. Natl. Acad. Sci. USA 97: 9508-9513.
5. Stefulj, J., et al. 2000. mRNA expression of serotonin receptors in cells of the immune tissues of the rat. Brain Behav. Immun. 14: 219-224.
6. Nicholson, R., et al. 2003. Serotonin receptor mRNA expression in rat dorsal root ganglion neurons. Neurosci. Lett. 337: 119-122.

CHROMOSOMAL LOCATION

Genetic locus: Htr5b (mouse) mapping to 1 E2.3.

PRODUCT

SR-5B 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see SR-5B shRNA Plasmid (m): sc-42243-SH and SR-5B shRNA (m) Lentiviral Particles: sc-42243-V as alternate gene silencing products.

For independent verification of SR-5B (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-42243A, sc-42243B and sc-42243C.

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 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

SR-5B siRNA (m) is recommended for the inhibition of SR-5B 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 µM in 66 µl. 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 SR-5B gene expression knockdown using RT-PCR Primer: SR-5B (m)-PR: sc-42243-PR (20 µl). 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-HT6 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 for detailed protocols and support products.