SANTA CRUZ BIOTECHNOLOGY, INC.

SR-3B siRNA (h): sc-61612

BACKGROUND

Serotonin is a molecule that functions as a neurotransmitter, a hormone and a mitogen, and it modulates several processes including psychiatric disorders, cardiovascular function and motility of the gastrointestinal tract. Serotonin receptors (also designated 5-hydroxytryptamine or 5-HT receptors) are members of the G protein-coupled receptor family that mediate the effects of serotonin. The serotonin receptors (alternatively designated SR) include SR-1, SR-2, SR-3, SR-4, SR-5, SR-6 and SR-7. The SR-1 receptors are subdivided into SR-1A, B, C, D, E and F receptors, while the SR-2 receptors comprise three subtypes: SR-2A, B and C. SR-3 is divided into SR-3A and SR-3B, a 441 amino acid protein with 41% sequence homology to SR-3A. SR-3B is responsible for fast, depolarizing responses in neurons after activation. The SR-3B protein is expressed in kidney and brain, specifically in hippocampus, thalamus and caudate nucleus, and particularly in amygdala. No expression of SR-3B is detected in heart, placenta, lung, liver, skeletal muscle or pancreas.

REFERENCES

1. Davies, P.A., Pistis, M., Hanna, M.C., Peters, J.A., Lambert, J.J., Hales, T.G. and Kirkness, E.F. 1999. The 5-HT3B subunit is a major determinant of serotonin-receptor function. Nature 397: 359-363.
2. Dubin, A.E., Huvar, R., D'Andrea, M.R., Pyati, J., Zhu, J.Y., Joy, K.C., Wilson, S.J., Galindo, J.E., Glass, C.A., Luo, L., Jackson, M.R., Lovenberg, T.W. and Erlander, M.G. 1999. The pharmacological and functional characteristics of the serotonin 5-HT(3A) receptor are specifically modified by a 5-HT(3B) receptor subunit. J. Biol. Chem. 274: 30799-30810.
3. Mott, D.D., Erreger, K., Banke, T.G. and Traynelis, S.F. 2001. Open probability of homomeric murine 5-HT3A serotonin receptors depends on subunit occupancy. J. Physiol. 535: 427-443.
4. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 604654. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
5. Kelley, S.P., Dunlop, J.I., Kirkness, E.F., Lambert, J.J. and Peters, J.A. 2003. A cytoplasmic region determines single-channel conductance in 5-HT3 receptors. Nature 424: 321-324.

CHROMOSOMAL LOCATION

Genetic locus: HTR3B (human) mapping to 11q23.2.

PRODUCT

SR-3B siRNA (h) 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-3B shRNA Plasmid (h): sc-61612-SH and SR-3B shRNA (h) Lentiviral Particles: sc-61612-V as alternate gene silencing products.

For independent verification of SR-3B (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-61612A, sc-61612B and sc-61612C.

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-3B siRNA (h) is recommended for the inhibition of SR-3B expression in human 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.

GENE EXPRESSION MONITORING

SR-3B (H-9): sc-390642 is recommended as a control antibody for monitoring of SR-3B 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-IgGκ BP-HRP: sc-516102 or m-IgGκ 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-IgGκ BP-FITC: sc-516140 or m-IgGκ 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-3B gene expression knockdown using RT-PCR Primer: SR-3B (h)-PR: sc-61612-PR (20 µl). 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.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.