SANTA CRUZ BIOTECHNOLOGY, INC.

HTR3C siRNA (h): sc-78193

BACKGROUND

Serotonin is a monoamine neurotransmitter that is made in serotonergic neurons in the CNS (central nervous system) and is important in the regulation of mood, sleep, vomiting, sexuality and appetite. HTR3C (5-hydroxytryptamine receptor 3, family member C) is a subunit of the SR (Serotonin receptor). HTR3C is also known as 5-HT3C or SR 3C and is a 447 amino acid protein that is expressed in a variety of tissues, including adult brain, colon, intestine, lung, muscle and stomach, as well as fetal colon and kidney. HTR3C is localized to the cellular membrane as a multi-pass membrane protein with four transmembrane spanning domains and is a member of the ligand-gated ionic channel family. HTR3C forms a pentaheteromeric complex with HTR3A, the result of which is a ligand-gated ionic channel that is a SR specific for cations and, when activated, causes fast depolarization in neurons. Due to its expression in colon and intestine, HTR3C may be involved in Serotonin functions within the gut, possibly functioning as a target for treatment of irritable bowel syndrome (IBS). HTR3C is also thought to play a role in anti-emetic efficacy and may not be functional in patients who exhibit chemotherapy-induced nausea and vomiting. Tow nonsynonymous single nucleotide polymorphisms of the gene encoding HTR3C are thought to be associated with autistic disorder.

REFERENCES

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2. Karnovsky, A.M., et al. 2003. A cluster of novel serotonin receptor 3-like genes on human chromosome 3. Gene 319: 137-148.
3. Online Mendelian Inheritance in Man, OMIM™. 2006. Johns Hopkins University, Baltimore, MD. MIM Number: 610121. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
4. Niesler, B., et al. 2007. Characterization of the novel human serotonin receptor subunits 5-HT3C,5-HT3D, and 5-HT3E. Mol. Pharmacol. 72: 8-17.
5. Rehnström, K., et al. 2008. Allelic variants in HTR3C show association with autism. Am. J. Med. Genet. B, Neuropsychiatr. Genet. 150B: 741-716.
6. Fasching, P.A., et al. 2008. Polymorphisms in the novel serotonin receptor subunit gene HTR3C show different risks for acute chemotherapy-induced vomiting after anthracycline chemotherapy. J. Cancer Res. Clin. Oncol. 134: 1079-1086.
7. Niesler, B., et al. 2008. Serotonin type 3 receptor genes: HTR3A, B, C, D, E. Pharmacogenomics 9: 501-504.
8. Ward, M.B., et al. 2008. Investigation of HTR3C mutations for association with $5HT_3$ receptor antagonist anti-emetic efficacy. Pharmacogenomics 9: 1027-1033.
9. Barnes, N.M., et al. 2009. The $5\text{-}HT_3$ receptor-the relationship between structure and function. Neuropharmacology 56: 273-284.

PROTOCOLS

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

CHROMOSOMAL LOCATION

Genetic locus: HTR3C (human) mapping to 3q27.1.

PRODUCT

HTR3C 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 HTR3C shRNA Plasmid (h): sc-78193-SH and HTR3C shRNA (h) Lentiviral Particles: sc-78193-V as alternate gene silencing products.

For independent verification of HTR3C (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-78193A, sc-78193B and sc-78193C.

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

HTR3C siRNA (h) is recommended for the inhibition of HTR3C 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor HTR3C gene expression knockdown using RT-PCR Primer: HTR3C (h)-PR: sc-78193-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.