SANTA CRUZ BIOTECHNOLOGY, INC.

HTR3E siRNA (h): sc-78474

BACKGROUND

The SR (Serotonin (5-hydroxytryptamine, or 5-HT) receptor) is a 5 subunit, oligomeric complex and HTR3E (5-hydroxytryptamine receptor 3, family member E) is a subunit of the SR. HTR3E is also known as 5-HT3E or SR 3E and is a 456 amino acid protein that is expressed in adult colon and intestinal tissues. HTR3E, which is expressed as five isoforms, contains four transmembrane spanning domains and is localized to the cellular membrane where it exists as a multi-pass membrane protein and belongs to the ligand-gated ionic channel family. HTR3E is thought to be closely related to HTR3C and HTR3D, which also function as subunits of SRs. The genes encoding these three subunits map very close to each other on chromosome 3. HTR3E, HTR3C and HTR3D are thought to be expressed individually within the endoplasmic reticulum (ER) and are detected elsewhere when coexpressed with HTR3A. HTR3E forms a pentaheteromeric complex with HTR3A, the result of which is a ligand-gated ionic SR which functions as a neurotransmitter, a hormone and a mitogen. This receptor is specific for cations and, when activated, causes fast depolarization in neurons. Due to its expression in colon and intestine, HTR3E may be involved in Serotonin functions within the gut, possibly functioning as a target for treatment of irritable bowel syndrome (IBS).

REFERENCES

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2. Peters, J.A., et al. 2004. The 5-hydroxytryptamine type 3 (5-HT3) receptor reveals a novel determinant of single-channel conductance. Biochem. Soc. Trans. 32: 547-552.
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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. Kapeller, J., et al. 2008. First evidence for an association of a functional variant in the microRNA-510 target site of the serotonin receptor-type 3E gene with diarrhea predominant irritable bowel syndrome. Hum. Mol. Genet. 17: 2967-2977.
6. Chetty, N., et al. 2008. Distribution of serotonin receptors and interacting proteins in the human sigmoid colon. Neurogastroenterol. Motil. 21: 551-558, 558e14-558e15.
7. Niesler, B., et al. 2008. Serotonin type 3 receptor genes: HTR3A, HTR3B, HTR3C, HTR3D, HTR3E. Pharmacogenomics 9: 501-504.
8. Holbrook, J.D., et al. 2009. Characterisation of 5-HT3C, 5-HT3D and 5-HT3E receptor subunits: evolution, distribution and function. J. Neurochem. 108: 384-396.
9. Barnes, N.M., et al. 2009. The 5-HT(3) receptor-the relationship between structure and function. Neuropharmacology 56: 273-284.

CHROMOSOMAL LOCATION

Genetic locus: HTR3E (human) mapping to 3q27.1.

PRODUCT

HTR3E 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 HTR3E shRNA Plasmid (h): sc-78474-SH and HTR3E shRNA (h) Lentiviral Particles: sc-78474-V as alternate gene silencing products.

For independent verification of HTR3E (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-78474A, sc-78474B and sc-78474C.

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

HTR3E siRNA (h) is recommended for the inhibition of HTR3E 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 HTR3E gene expression knockdown using RT-PCR Primer: HTR3E (h)-PR: sc-78474-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.