SANTA CRUZ BIOTECHNOLOGY, INC.

T2R3 siRNA (h): sc-89478

BACKGROUND

Intron-less taste receptor genes encode for a family of seven-transmembrane receptor proteins, which function as bitter taste receptors. One such member is the T2R3 (taste receptor type 2 member 3), also known as TAS2R3, which is a 316 amino acid multi-pass membrane protein that belongs to the G protein-coupled receptor T2R family. Acting in the oral cavity and the gastrointestinal tract, T2R3 is a gustducin-coupled receptor that is implicated in the perception of bitter compounds. T2R3 mediates responses to certain taste through PLC β2, a phospholipase C selectively expressed in taste tissue, and the calcium-regulated cation channel TRPM5. While expressed in subsets of taste receptor cells of the tongue and palate epithelium and exclusively in gustducin-positive cells, T2R3 is expressed in the antrum and fundus (part of the stomach), duodenum and in gastric endocrine cells. The gene that encodes T2R3 contains approximately 1,101 bases and maps to human chromosome 7q34.

REFERENCES

1. Adler, E., et al. 2000. A novel family of mammalian taste receptors. Cell 100: 693-702.
2. Chandrashekar, J., et al. 2000. T2Rs function as bitter taste receptors. Cell 100: 703-711.
3. Kinnamon, S.C. 2000. A plethora of taste receptors. Neuron 25: 507-510.
4. Online Mendelian Inheritance in Man, OMIM™. 2000. Johns Hopkins University, Baltimore, MD. MIM Number: 604868. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
5. Ueda, T., et al. 2001. Identification of coding single-nucleotide polymorphisms in human taste receptor genes involving bitter tasting. Biochem. Biophys. Res. Commun. 285: 147-151.
6. Montmayeur, J.P. and Matsunami, H. 2002. Receptors for bitter and sweet taste. Curr. Opin. Neurobiol. 12: 366-371.
7. Margolskee, R.F. 2002. Molecular mechanisms of bitter and sweet taste transduction. J. Biol. Chem. 277: 1-4.
8. Zhang, Y., et al. 2003. Coding of sweet, bitter, and umami tastes: different receptor cells sharing similar signaling pathways. Cell 112: 293-301.

CHROMOSOMAL LOCATION

Genetic locus: TAS2R3 (human) mapping to 7q34.

PRODUCT

T2R3 siRNA (h) is a pool of 2 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 T2R3 shRNA Plasmid (h): sc-89478-SH and T2R3 shRNA (h) Lentiviral Particles: sc-89478-V as alternate gene silencing products.

For independent verification of T2R3 (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-89478A and sc-89478B.

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

T2R3 siRNA (h) is recommended for the inhibition of T2R3 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

T2R3 (E-12): sc-398489 is recommended as a control antibody for monitoring of T2R3 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-IgGλ BP-HRP: sc-516132 or m-IgGλ BP-HRP (Cruz Marker): sc-516132-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-IgGλ BP-FITC: sc-516185 or m-IgGλ BP-PE: sc-516186 (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 T2R3 gene expression knockdown using RT-PCR Primer: T2R3 (h)-PR: sc-89478-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.