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T2R7 siRNA (h): sc-45336

BACKGROUND

The sense of taste provides animals with valuable information about the quality and nutritional value of food. A family of G protein-coupled receptors are involved in taste perception and include T1R, which is involved in sweet and umami taste perception, and T2R, which is involved in bitter taste perception. Both types of taste receptors couple to various G proteins to initiate signal transduction cascades. Single taste receptor cells express a variety of T2Rs, suggesting that each cell is capable of recognizing multiple tastants. T2R6 (also designated T2R30, mt2r42, STC 7-4 or taste receptor, type 2, member 130) is an integral membrane receptor protein in mice that may play a role in the perception of bitterness and in sensing the chemical composition of the gastrointestinal content. The activity of this receptor may stimulate α -gustducin, mediate PLC- β -2 activation and lead to the gating of TRPM5. T2R6 is expressed in subsets of taste receptor cells of the tongue and palate epithelium and exclusively in gustducin-positive cells. The human homolog of T2R6, designated T2R7 (TAS2R7, TRB4 or taste receptor, type 2, member 7) is a G protein-coupled receptor expressed in taste receptor cells of the tongue and palate epithelia.

REFERENCES

- Amrein, H. and Bray, S. 2003. Bitter-sweet solution in taste transduction. *Cell* 112: 283-284.
- Zhang, Y., et al. 2003. Coding of sweet, bitter, and umami tastes: different receptor cells sharing similar signaling pathways. *Cell* 112: 293-301.
- Zhao, G.Q., et al. 2003. The receptors for mammalian sweet and umami taste. *Cell* 115: 255-266.
- Scott, K. 2004. The sweet and the bitter of mammalian taste. *Curr. Opin. Neurobiol.* 14: 423-427.
- He, W., et al. 2004. Umami taste responses are mediated by α -transducin and α -gustducin. *J. Neurosci.* 24: 7674-7680.

CHROMOSOMAL LOCATION

Genetic locus: TAS2R7 (human) mapping to 12p13.2.

PRODUCT

T2R7 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see T2R7 shRNA Plasmid (h): sc-45336-SH and T2R7 shRNA (h) Lentiviral Particles: sc-45336-V as alternate gene silencing products.

For independent verification of T2R7 (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-45336A, sc-45336B and sc-45336C.

PROTOCOLS

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

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 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

T2R7 siRNA (h) is recommended for the inhibition of T2R7 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 μ M in 66 μ l. 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

T2R7 (C-12): sc-377364 is recommended as a control antibody for monitoring of T2R7 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-IgG κ BP-HRP: sc-516102 or m-IgG κ 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-IgG κ BP-FITC: sc-516140 or m-IgG κ 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 T2R7 gene expression knockdown using RT-PCR Primer: T2R7 (h)-PR: sc-45336-PR (20 μ l). 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.