

T2R41 siRNA (m): sc-154025

BACKGROUND

G protein-coupled receptors (GPRs), also known as seven transmembrane receptors, heptahelical receptors or 7TM receptors, comprise a superfamily of proteins that play a role in many different stimulus-response pathways. G protein-coupled receptors translate extracellular signals into intracellular signals (G protein activation) and they respond to a variety of signaling molecules, such as hormones and neurotransmitters. T2R41 (taste receptor, type 2, member 41), also known as TAS2R41 or T2R59, is a 307 amino acid multi-pass membrane protein that belongs to the G protein-coupled receptor superfamily. Expressed in taste receptor cells, as well as in gustducin-positive cells, T2R41 functions as a receptor that is thought to play a role in the perception of bitterness, as well as the recognition of gastrointestinal chemicals.

REFERENCES

1. Larhammar, D., Blomqvist, A.G. and Wahlestedt, C. 1993. The receptor revolution—multiplicity of G protein-coupled receptors. *Drug Des. Discov.* 9: 179-188.
2. Ji, T.H., Grossmann, M. and Ji, I. 1998. G protein-coupled receptors. I. Diversity of receptor-ligand interactions. *J. Biol. Chem.* 273: 17299-17302.
3. Schöneberg, T., Schultz, G. and Guderhann, T. 1999. Structural basis of G protein-coupled receptor function. *Mol. Cell. Endocrinol.* 151: 181-193.
4. Montmayeur, J.P. and Matsunami, H. 2002. Receptors for bitter and sweet taste. *Curr. Opin. Neurobiol.* 12: 366-371.
5. Conte, C., Ebeling, M., Marcuz, A., Nef, P. and Andres-Barquin, P.J. 2002. Identification and characterization of human taste receptor genes belonging to the TAS2R family. *Cytogenet. Genome Res.* 98: 45-53.
6. Margolskee, R.F. 2002. Molecular mechanisms of bitter and sweet taste transduction. *J. Biol. Chem.* 277: 1-4.
7. Bufo, B., Hofmann, T., Krautwurst, D., Raguse, J.D. and Meyerhof, W. 2002. The human TAS2R16 receptor mediates bitter taste in response to β -glucopyranosides. *Nat. Genet.* 32: 397-401.
8. Zhang, Y., Hoon, M.A., Chandrashekar, J., Mueller, K.L., Cook, B., Wu, D., Zuker, C.S. and Ryba, N.J. 2003. Coding of sweet, bitter, and umami tastes: different receptor cells sharing similar signaling pathways. *Cell* 112: 293-301.
9. Fischer, A., Gilad, Y., Man, O. and Pääbo, S. 2005. Evolution of bitter taste receptors in humans and apes. *Mol. Biol. Evol.* 22: 432-436.

CHROMOSOMAL LOCATION

Genetic locus: Tas2r126 (mouse) mapping to 6 B2.1.

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.

PRODUCT

T2R41 siRNA (m) 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 T2R41 shRNA Plasmid (m): sc-154025-SH and T2R41 shRNA (m) Lentiviral Particles: sc-154025-V as alternate gene silencing products.

For independent verification of T2R41 (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-154025A, sc-154025B and sc-154025C.

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

T2R41 siRNA (m) is recommended for the inhibition of T2R41 expression in mouse 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor T2R41 gene expression knockdown using RT-PCR Primer: T2R41 (m)-PR: sc-154025-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.