

OR6N1 siRNA (h): sc-78567

BACKGROUND

Olfactory receptors function by associating with odorant molecules to launch a neuronal response that elicits the perception of smell. Olfactory receptor genes are unevenly dispersed among 51 loci on 21 human chromosomes, and are composed of 172 subfamilies. OR6N1 (olfactory receptor, family 6, subfamily N, member 1), also known as olfactory receptor OR1-22, is a 312 amino acid multi-pass membrane protein belonging to the G protein-coupled receptor 1 family. As the largest family in the genome, the G protein-coupled receptor 1 family originated from single coding-exon genes. Encoded by a gene that maps to human chromosome 1q23.1, OR6N1 functions as an odorant receptor. Like many hormone and neurotransmitter receptors, OR6N1 shares a 7-transmembrane domain structure and recognizes G protein-mediated transduction of odorant signals.

REFERENCES

1. Chess, A., Simon, I., Cedar, H. and Axel, R. 1994. Allelic inactivation regulates olfactory receptor gene expression. *Cell* 78: 823-834.
2. Trask, B.J., Friedman, C., Martin-Gallardo, A., Rowen, L., Akinbami, C., Blankenship, J., Collins, C., Giorgi, D., Iadonato, S., Johnson, F., Kuo, W.L., Massa, H., Morrish, T., Naylor, S., Nguyen, O.T., Rouquier, S., et al. 1998. Members of the olfactory receptor gene family are contained in large blocks of DNA duplicated polymorphically near the ends of human chromosomes. *Hum. Mol. Genet.* 7: 13-26.
3. Rouquier, S., Blancher, A. and Giorgi, D. 2000. The olfactory receptor gene repertoire in primates and mouse: evidence for reduction of the functional fraction in primates. *Proc. Natl. Acad. Sci. USA* 97: 2870-2874.
4. Giglio, S., Broman, K.W., Matsumoto, N., Calvari, V., Gimelli, G., Neumann, T., Ohashi, H., Voullaire, L., Larizza, D., Giorda, R., Weber, J.L., Ledbetter, D.H. and Zuffardi, O. 2001. Olfactory receptor-gene clusters, genomic-inversion polymorphisms, and common chromosome rearrangements. *Am. J. Hum. Genet.* 68: 874-883.
5. Fuchs, T., Malecova, B., Linhart, C., Sharan, R., Khen, M., Herwig, R., Shmulevich, D., Elkon, R., Steinfath, M., O'Brien, J.K., Radelof, U., Lehrach, H., Lancet, D. and Shamir, R. 2002. DEFOG: a practical scheme for deciphering families of genes. *Genomics* 80: 295-302.
6. Niimura, Y. and Nei, M. 2003. Evolution of olfactory receptor genes in the human genome. *Proc. Natl. Acad. Sci. USA* 100: 12235-12240.
7. Malnic, B., Godfrey, P.A. and Buck, L.B. 2004. The human olfactory receptor gene family. *Proc. Natl. Acad. Sci. USA* 101: 2584-2589.
8. SWISS-PROT/TrEMBL (Q8NGY5). World Wide Web URL: <http://www.uniprot.org/uniprot/Q8NGY5>

CHROMOSOMAL LOCATION

Genetic locus: OR6N1 (human) mapping to 1q23.1.

PROTOCOLS

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

PRODUCT

OR6N1 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 OR6N1 shRNA Plasmid (h): sc-78567-SH and OR6N1 shRNA (h) Lentiviral Particles: sc-78567-V as alternate gene silencing products.

For independent verification of OR6N1 (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-78567A, sc-78567B and sc-78567C.

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

OR6N1 siRNA (h) is recommended for the inhibition of OR6N1 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor OR6N1 gene expression knockdown using RT-PCR Primer: OR6N1 (h)-PR: sc-78567-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.