

# OR6X1 siRNA (h): sc-96931

## BACKGROUND

Olfactory receptors are G protein-coupled receptors that localize to the cilia of olfactory sensory neurons where they display affinity for and bind to a variety of odor molecules. The genes encoding olfactory receptors comprise the largest family in the human genome. The binding of olfactory receptor proteins to odor molecules triggers a signal transduction that propagates nerve impulses throughout the body, ultimately leading to transmission of the signal to the brain and the subsequent perception of smell. OR6X1 (olfactory receptor, family 6, subfamily X, member 1), also known as OR11-270, is a 312 amino acid multi-pass membrane protein that functions as an odorant receptor and belongs to the G protein-coupled receptor 1 family. The gene encoding OR6X1 maps to human chromosome 11q24.1.

## REFERENCES

1. Ben-Arie, N., Lancet, D., Taylor, C., Khen, M., Walker, N., Ledbetter, D.H., Carrozzo, R., Patel, K., Sheer, D. and Lehrach, H. 1994. Olfactory receptor gene cluster on human chromosome 17: possible duplication of an ancestral receptor repertoire. *Hum. Mol. Genet.* 3: 229-235.
2. Sullivan, S.L., Ressler, K.J. and Buck, L.B. 1994. Odorant receptor diversity and patterned gene expression in the mammalian olfactory epithelium. *Prog. Clin. Biol. Res.* 390: 75-84.
3. Rouquier, S., Taviaux, S., Trask, B.J., Brand-Arpon, V., van den Engh, G., Demaille, J. and Giorgi, D. 1998. Distribution of olfactory receptor genes in the human genome. *Nat. Genet.* 18: 243-250.
4. Glusman, G., Sosinsky, A., Ben-Asher, E., Avidan, N., Sonkin, D., Bahar, A., Rosenthal, A., Clifton, S., Roe, B., Ferraz, C., Demaille, J. and Lancet, D. 2000. Sequence, structure, and evolution of a complete human olfactory receptor gene cluster. *Genomics* 63: 227-245.
5. Lane, R.P., Cutforth, T., Young, J., Athanasiou, M., Friedman, C., Rowen, L., Evans, G., Axel, R., Hood, L. and Trask, B.J. 2001. Genomic analysis of orthologous mouse and human olfactory receptor loci. *Proc. Natl. Acad. Sci. USA* 98: 7390-7395.
6. Gaillard, I., Rouquier, S. and Giorgi, D. 2004. Olfactory receptors. *Cell. Mol. Life Sci.* 61: 456-469.
7. Hatt, H. 2004. Molecular and cellular basis of human olfaction. *Chem. Biodivers.* 1: 1857-1869.
8. Malnic, B., Godfrey, P.A. and Buck, L.B. 2004. The human olfactory receptor gene family. *Proc. Natl. Acad. Sci. USA* 101: 2584-2589.
9. Kato, A. and Touhara, K. 2009. Mammalian olfactory receptors: pharmacology, G protein-coupling and desensitization. *Cell. Mol. Life Sci.* 66: 3743-3753.

## CHROMOSOMAL LOCATION

Genetic locus: OR6X1 (human) mapping to 11q24.1.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.

## PRODUCT

OR6X1 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see OR6X1 shRNA Plasmid (h): sc-96931-SH and OR6X1 shRNA (h) Lentiviral Particles: sc-96931-V as alternate gene silencing products.

For independent verification of OR6X1 (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-96931A, sc-96931B and sc-96931C.

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

## APPLICATIONS

OR6X1 siRNA (h) is recommended for the inhibition of OR6X1 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  $\mu$ M in 66  $\mu$ 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 OR6X1 gene expression knockdown using RT-PCR Primer: OR6X1 (h)-PR: sc-96931-PR (20  $\mu$ 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.