SANTA CRUZ BIOTECHNOLOGY, INC.

OR5K1 siRNA (h): sc-77901

BACKGROUND

Olfactory receptors are G protein-coupled receptor proteins 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 cascade that leads to the production of cAMP via an olfactory-enriched adenylate cyclase. This event ultimately leads to transmission of action potentials to the brain and the subsequent perception of smell. OR5K1 (Olfactory receptor 5K1), also known as Olfactory receptor OR3-8, is a 316 amino acid multi-pass membrane protein that functions as an odorant receptor, effectively binding odor molecules and initiating the propagation of signals to the primary olfactory cortex. The gene encoding OR5K1 maps to human chromosome 3, which spans 200 million base pairs and encodes between 1,100 and 1,500 genes.

REFERENCES

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3. Sullivan, S.L. and Dryer, L. 1996. Information processing in mammalian olfactory system. J. Neurobiol. 30: 20-36.
4. Touhara, K., et al. 1999. Functional identification and reconstitution of an odorant receptor in single olfactory neurons. Proc. Natl. Acad. Sci. USA 96: 4040-4045.
5. Kajiya, K., et al. 2001. Molecular bases of odor discrimination: reconstitution of olfactory receptors that recognize overlapping sets of odorants. J. Neurosci. 21: 6018-6025.
6. Touhara, K. 2001. Functional cloning and reconstitution of vertebrate odorant receptors. Life Sci. 68: 2199-2206.
7. Touhara, K. 2002. Odor discrimination by G protein-coupled olfactory receptors. Microsc. Res. Tech. 58: 135-141.
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CHROMOSOMAL LOCATION

Genetic locus: OR5K1 (human) mapping to 3q11.2.

PRODUCT

OR5K1 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 OR5K1 shRNA Plasmid (h): sc-77901-SH and OR5K1 shRNA (h) Lentiviral Particles: sc-77901-V as alternate gene silencing products.

For independent verification of OR5K1 (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-77901A and sc-77901B.

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

OR5K1 siRNA (h) is recommended for the inhibition of OR5K1 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor OR5K1 gene expression knockdown using RT-PCR Primer: OR5K1 (h)-PR: sc-77901-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.