



OR5K3 (Y-13): sc-103097

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. OR5K3 (Olfactory receptor 5K3) is a 321 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 OR5K3 maps to human chromosome 3, which spans 200 million base pairs and encodes between 1,100 and 1,500 genes.

REFERENCES

1. Buck, L.B. 1993. Receptor diversity and spatial patterning in the mammalian olfactory system. *Ciba Found. Symp.* 179: 51-64.
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. Sullivan, S.L. and Dryer, L. 1996. Information processing in mammalian olfactory system. *J. Neurobiol.* 30: 20-36.
4. Touhara, K., Sengoku, S., Inaki, K., Tsuboi, A., Hirono, J., Sato, T., Sakano, H. and Haga, T. 1999. Functional identification and reconstitution of an odorant receptor in single olfactory neurons. *Proc. Natl. Acad. Sci. USA* 96: 4040-4045.
5. Kajiyama, K., Inaki, K., Tanaka, M., Haga, T., Kataoka, H. and Touhara, K. 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.
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. Keller, A. and Vosshall, L.B. 2008. Better smelling through genetics: mammalian odor perception. *Curr. Opin. Neurobiol.* 18: 364-369.

STORAGE

Store at 4° C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

PROTOCOLS

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

CHROMOSOMAL LOCATION

Genetic locus: OR5K3 (human) mapping to 3q11.2.

SOURCE

OR5K3 (Y-13) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an extracellular domain of OR5K3 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-103097 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

OR5K3 (Y-13) is recommended for detection of OR5K3 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000); may cross-react with OR5K1.

Suitable for use as control antibody for OR5K3 siRNA (h): sc-78395, OR5K3 shRNA Plasmid (h): sc-78395-SH and OR5K3 shRNA (h) Lentiviral Particles: sc-78395-V.

Molecular Weight of OR5K3: 37 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

RESEARCH USE

For research use only, not for use in diagnostic procedures.