

# OR4K1 (C-14): sc-107884

## BACKGROUND

Olfactory receptors interact with odorant molecules in the nose to initiate a neuronal response that leads to the perception of smell. While they share a seven transmembrane domain structure with many neurotransmitter and hormone receptors, olfactory receptors are responsible for the recognition and transduction of odorant signals. The olfactory receptor gene family is the largest in the genome. OR4K1 (olfactory receptor 4K1), also known as OR14-19, is a 311 amino acid multi-pass membrane protein that belongs to the G protein-coupled receptor 1 family. The gene that encodes OR4K1 consists of more than 900 bases and maps to human chromosome 14q11.2. Housing over 700 genes, chromosome 14 comprises nearly 3.5% of the human genome. Chromosome 14 encodes the presenilin 1 (PSEN1) gene, which is one of the three key genes associated with the development of Alzheimer's disease (AD). The SERPINA1 gene is also located on chromosome 14 and, when defective, leads to the genetic disorder  $\alpha$ -1-antitrypsin deficiency, which is characterized by severe lung complications and liver dysfunction.

## REFERENCES

- Zech, L., et al. 1984. Inversion of chromosome 14 marks human T-cell chronic lymphocytic leukaemia. *Nature* 308: 858-860.
- Aisenberg, A.C., et al. 1985. Rearrangement of the gene for the  $\beta$  chain of the T-cell receptor in T-cell chronic lymphocytic leukemia and related disorders. *N. Engl. J. Med.* 313: 529-533.
- Schellenberg, G.D., et al. 1992. Genetic linkage evidence for a familial Alzheimer's disease locus on chromosome 14. *Science* 258: 668-671.
- Malnic, B., et al. 2004. The human olfactory receptor gene family. *Proc. Natl. Acad. Sci. USA* 101: 2584-2589.
- Avramopoulos, D., et al. 2005. Linkage to chromosome 14q in Alzheimer's disease (AD) patients without psychotic symptoms. *Am. J. Med. Genet. B Neuropsychiatr. Genet.* 132B: 9-13.
- Larner, A.J., et al. 2009. Genotype-phenotype relationships of presenilin-1 mutations in Alzheimer's disease: an update. *J. Alzheimers Dis.* 17: 259-265.
- Topic, A., et al. 2009.  $\alpha$ -1-antitrypsin phenotypes in adult liver disease patients. *Ups. J. Med. Sci.* 114: 228-234.

## CHROMOSOMAL LOCATION

Genetic locus: OR4K1 (human) mapping to 14q11.2.

## SOURCE

OR4K1 (C-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping within a C-terminal cytoplasmic domain of OR4K1 of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-107884 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

OR4K1 (C-14) is recommended for detection of OR4K1 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], 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); non cross-reactive with other OR4 family members.

OR4K1 (C-14) is also recommended for detection of OR4K1 in additional species, including equine and canine.

Suitable for use as control antibody for OR4K1 siRNA (h): sc-92368, OR4K1 shRNA Plasmid (h): sc-92368-SH and OR4K1 shRNA (h) Lentiviral Particles: sc-92368-V.

Molecular Weight (predicted) of OR4K1: 35 kDa.

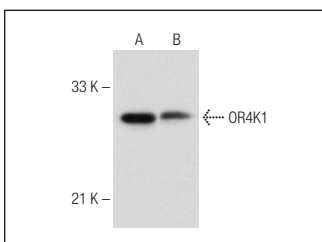
Molecular Weight (observed) of OR4K1: 29 kDa.

Positive Controls: MCF7 whole cell lysate: sc-2206 or human thyroid tissue extract.

## 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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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.

## DATA



OR4K1 (C-14): sc-107884. Western blot analysis of OR4K1 expression in MCF7 whole cell lysate (A) and human thyroid tissue extract (B).

## STORAGE

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

## RESEARCH USE

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