

# ODR-10 (cN-19): sc-15509

## BACKGROUND

Several volatile odorants stimulate a behavioral response in *C. elegans*. The odr-10 gene encodes a seven transmembrane domain protein, which is required for chemotaxis to the odorant diacetyl. The ODR-10 protein localizes to the cilia AWA sensory olfactory neurons where its expression is regulated by the transcription factor ODR-7 and the sensory pathway protein OSM-9. The residues immediately following the seventh membrane-spanning domain are necessary for ODR-10 localization to the cilia via dendritic transport vesicles. This specific expression by AWA olfactory neurons as opposed to AWB olfactory neurons is essential for proper response to diacetyl. In ODR-10 transfected human cells, exposure to diacetyl induces a transient elevation of intracellular Ca<sup>2+</sup>, suggesting the involvement of a G protein signaling pathway. These same cells specifically responded to acetyl and two metabolic precursors for acetyl production, pyruvate and citrate.

## REFERENCES

1. Sengupta, P., Chou, J.H. and Bargmann, C.I. 1996. ODR-10 encodes a seven transmembrane domain olfactory receptor required for responses to the odorant diacetyl. *Cell* 84: 899-909.
2. Colbert, H.A., Smith, T.L. and Bargmann, C.I. 1997. OSM-9, a novel protein with structural similarity to channels, is required for olfaction, mechanosensation, and olfactory adaptation in *Caenorhabditis elegans*. *J. Neurosci.* 17: 8259-8269.
3. Troemel, E.R., Kimmel, B.E. and Bargmann, C.I. 1997. Reprogramming chemotaxis responses: sensory neurons define olfactory preferences in *C. elegans*. *Cell* 91: 161-169.
4. Zhang, Y., Chou, J.H., Bradley, J., Bargmann, C.I. and Zinn, K. 1997. The *Caenorhabditis elegans* seven-transmembrane protein ODR-10 functions as an odorant receptor in mammalian cells. *Proc. Natl. Acad. Sci. USA* 94: 12162-12167.
5. Dwyer, N.D., Adler, C.E., Crump, J.G., L'Étoile, N.D. and Bargmann, C.I. 2001. Polarized dendritic transport and the AP-1  $\mu$ 1 clathrin adaptor UNC-101 localize odorant receptors to olfactory cilia. *Neuron* 31: 277-287.

## SOURCE

ODR-10 (cN-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of ODR-10 of *Caenorhabditis elegans* 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-15509 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## STORAGE

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

## APPLICATIONS

ODR-10 (cN-19) is recommended for detection of ODR-10 of *Caenorhabditis elegans* 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).

## 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.

## PROTOCOLS

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