

OMP (Q-12): sc-49069

BACKGROUND

The olfactory marker protein (OMP) has been shown to interact with the brain expressed X-linked genes Bex1 and Bex2. It is expressed in the cytoplasm of olfactory chemosensory neurons in the nasal neuroepithelium. OMP expression is a sign of mature vertebrate olfactory receptor neurons (ORNs). OMP RNA is synthesized in neuronal cell bodies in the epithelium and is then transported into axons and terminals in the olfactory bulb to be translated. OMP may have a modulatory role in the odor detection/signal transduction cascade. In fetal olfactory epithelial cells, OMP is also a potent enhancer of mitosis and it promotes an increase in uptake of tritiated thymidine in liver. Deletion of the OMP gene causes a compromised ability to respond to odor stimuli and an elevation in behavioral threshold sensitivity.

REFERENCES

1. Buiakova, O.I., et al. 1996. Olfactory marker protein (OMP) gene deletion causes altered physiological activity of olfactory sensory neurons. *Proc. Natl. Acad. Sci. USA* 93: 9858-9863.
2. Farbman, A.I., et al. 2000. TGF α and olfactory marker protein enhance mitosis in rat olfactory epithelium *in vivo*. *Neuroreport* 11: 3655-3658.
3. Behrens, M., et al. 2003. Identification of members of the Bex gene family as olfactory marker protein (OMP) binding partners. *J. Neurochem.* 86: 1289-1296.
4. Hayward, M.D., et al. 2004. Expression of Bcl-2 extends the survival of olfactory receptor neurons in the absence of an olfactory bulb. *Brain Res. Mol. Brain Res.* 132: 221-234.
5. Gitti, R.K., et al. 2005. Backbone dynamics of the olfactory marker protein as studied by ¹⁵N NMR relaxation measurements. *Biochemistry* 44: 9673-9679.
6. Moriya-Ito, K., et al. 2005. Maturation of vomeronasal receptor neurons *in vitro* by coculture with accessory olfactory bulb neurons. *Chem. Senses* 30: 111-119.
7. Nathan, B.P., et al. 2005. Delayed olfactory nerve regeneration in apoE-deficient mice. *Brain Res.* 1041: 87-94.
8. Waguespack, A.M., et al. 2005. Naris occlusion alters olfactory marker protein immunoreactivity in olfactory epithelium. *Brain Res.* 1044: 1-7.
9. St. John, J.A., et al. 2005. Olfactory marker protein modulates primary olfactory axon overshooting in the olfactory bulb. *J. Comp. Neurol.* 488: 61-69.

CHROMOSOMAL LOCATION

Genetic locus: OMP (human) mapping to 11q13.5; Omp (mouse) mapping to 7 E1.

SOURCE

OMP (Q-12) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of OMP of human origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-49069 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

OMP (Q-12) is recommended for detection of OMP of mouse, rat and 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).

Suitable for use as control antibody for OMP siRNA (h): sc-61260, OMP siRNA (m): sc-61261, OMP shRNA Plasmid (h): sc-61260-SH, OMP shRNA Plasmid (m): sc-61261-SH, OMP shRNA (h) Lentiviral Particles: sc-61260-V and OMP shRNA (m) Lentiviral Particles: sc-61261-V.

Molecular Weight of OMP: 19 kDa.

Positive Controls: mouse brain extract: sc-2253 or mouse embryo extract: sc-364239.

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.

SELECT PRODUCT CITATIONS

1. Matayoshi, R. and Otaki, J.M. 2011. Immunohistochemical detection of olfactory-specific sensory transduction proteins in olfactory neuroblastoma. *Neurosci. Res.* 69: 258-262.

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.



Try **OMP (B-6): sc-365818**, our highly recommended monoclonal alternative to OMP (Q-12).