SANTA CRUZ BIOTECHNOLOGY, INC.

OMG (C-15): sc-14525

BACKGROUND

Oligodendrocyte myelin glycoprotein (OMG, OMgp) is a glycosylphosphatidylinositol-anchored protein expressed by neurons and oligodendrocytes that influences the development of the adult central nervous system (CNS). OMG inhibits neurite outgrowth through its interaction with the Nogo receptor. This function requires its leucine-rich repeat domain, a highly-conserved region in OMG that influences cell proliferation, formation and maintenance of myelin sheaths. OMG inhibits neurite outgrowth from rat cerebellar granule and hippocampal cells; from dorsal root ganglion explants in which growth cone collapse was observed; from rat retinal ganglion neurons; and from NG108 and PC-12 cells.

REFERENCES

1. Habib, A.A., et al. 1998. The OMgp gene, a second growth suppressor within the NF1 gene. Oncogene 16: 1525-1531.
2. Peters, N., et al. 1999. Quantitative analysis of NF1 and OMgp gene transcripts in sporadic gliomas, sporadic meningiomas and neurofibromatosis type 1-associated plexiform neurofibromas. Acta Neuropathol. 97: 547-551.
3. Wang, K.C., et al. 2002. p75 interacts with the Nogo receptor as a co-receptor for Nogo, MAG and OMgp. Nature 420: 74-78.
4. Kottis, V., et al. 2002. Oligodendrocyte myelin glycoprotein (OMgp) is an inhibitor of neurite outgrowth. J. Neurochem. 82: 1566-1569.
5. Vourc'h, P., et al. 2004. Oligodendrocyte myelin glycoprotein (OMgp): evolution, structure and function. Brain Res. Brain Res. Rev. 45: 115-124.
6. Bischof, F., et al. 2004. A structurally available encephalitogenic epitope of myelin oligodendrocyte glycoprotein specifically induces a diversified pathogenic autoimmune response. J. Immunol. 173: 600-606.
7. Li, S., et al. 2004. Blockade of Nogo-66, myelin-associated glycoprotein, and oligodendrocyte myelin glycoprotein by soluble Nogo-66 receptor promotes axonal sprouting and recovery after spinal injury. J. Neurosci. 24: 10511-10520.
8. Marta, C.B., et al. 2005. Signaling cascades activated upon antibody cross-linking of myelin oligodendrocyte glycoprotein: potential implications for multiple sclerosis. J. Biol. Chem. 280: 8985-8993.

CHROMOSOMAL LOCATION

Genetic locus: OMG (human) mapping to 17q11.2; Omg (mouse) mapping to 11 B5.

SOURCE

OMG (C-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of OMG 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-14525 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

OMG (C-15) is recommended for detection of OMG 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 OMG siRNA (h): sc-42032, OMG siRNA (m): sc-42033, OMG shRNA Plasmid (h): sc-42032-SH, OMG shRNA Plasmid (m): sc-42033-SH, OMG shRNA (h) Lentiviral Particles: sc-42032-V and OMG shRNA (m) Lentiviral Particles: sc-42033-V.

Molecular Weight of OMG: 120 kDa.

Positive Controls: NIH/3T3 whole cell lysate: sc-2210 or SK-N-MC cell lysate: sc-2237.

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. Jovanova-Nesic, K., et al. 2006. MMP-2, VCAM-1 and NCAM-1 expression in the brain of rats with experimental autoimmune encephalomyelitis as a trigger mechanism for synaptic plasticity and pathology. J. Neuroimmunol. 181: 112-121.
2. Jovanova-Nesic, K., et al. 2009. Choroid plexus connexin 43 expression and gap junction flexibility are associated with clinical features of acute EAE. Ann. N.Y. Acad. Sci. 1173: 75-82.

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.

PROTOCOLS

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