

OMG siRNA (h): sc-42032

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. Hirata, S., et al. 2005. Prevention of experimental autoimmune encephalomyelitis by transfer of embryonic stem cell-derived dendritic cells expressing myelin oligodendrocyte glycoprotein peptide along with TRAIL or programmed death-1 ligand. *J. Immunol.* 174: 1888-1897.

CHROMOSOMAL LOCATION

Genetic locus: OMG (human) mapping to 17q11.2.

PRODUCT

OMG siRNA (h) is a pool of 3 target-specific 19-25 nt siRNAs designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see OMG shRNA Plasmid (h): sc-42032-SH and OMG shRNA (h) Lentiviral Particles: sc-42032-V as alternate gene silencing products.

For independent verification of OMG (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-42032A, sc-42032B and sc-42032C.

STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20° C, avoid contact with RNases and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

OMG siRNA (h) is recommended for the inhibition of OMG expression in human cells.

SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10 μ M in 66 μ l. Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

GENE EXPRESSION MONITORING

OMG (E-8): sc-271704 is recommended as a control antibody for monitoring of OMG gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor OMG gene expression knockdown using RT-PCR Primer: OMG (h)-PR: sc-42032-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

RESEARCH USE

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

PROTOCOLS

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