

mGluR-3 siRNA (m): sc-61031

BACKGROUND

The mGluR proteins (metabotropic Glutamate Receptors) are members of the G protein-coupled receptor family and are functionally and pharmacologically distinct from the GluR proteins (ionotropic Glutamate Receptors). The eight currently known mGluR proteins are mediated by two G proteins with opposing regulation of adenylate cyclase pathways. The activities of mGluR1 and mGluR5 are mediated by a G protein that activates a phosphatidylinositol-calcium second messenger system and generates a calcium-activated chloride current. The remainder of the eight sub-types of mGluR have an activity mediated by a G protein that inhibits adenylate cyclase activity. mGluR-3, which may interact with GRASP, acts as a receptor for glutamate.

REFERENCES

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2. Kammermeier, P.J., et al. 2005. Activation of metabotropic glutamate receptor 1 dimers requires glutamate binding in both subunits. *J. Pharmacol. Exp. Ther.* 312: 502-508.
3. Bäckström, P., et al. 2005. Suppression of alcohol self-administration and cue-induced reinstatement of alcohol seeking by the mGluR2/3 receptor agonist LY379268 and the mGluR8 receptor agonist (S)-3,4-DCPG. *Eur. J. Pharmacol.* 528: 110-118.
4. Pacheco Otalora, L.F., et al. 2006. Abnormal mGluR2/3 expression in the perforant path termination zones and mossy fibers of chronically epileptic rats. *Brain Res.* 1098: 170-185.
5. Bonsi, P., et al. 2006. Striatal metabotropic glutamate receptors as a target for pharmacotherapy in Parkinson's disease. *Amino Acids* 32: 189-195.
6. Ohana, L., et al. 2006. The metabotropic glutamate G protein-coupled receptors mGluR-3 and mGluR1a are voltage sensitive. *J. Biol. Chem.* 281: 24204-24215.
7. Yoshimizu, T., et al. 2006. An mGluR2/3 antagonist, MGS0039, exerts behavioral models in rats. *Psychopharmacology* 186: 587-593.
8. Marengo, S., et al. 2006. Effect of metabotropic glutamate receptor 3 genotype on N-acetylaspartate measures in the dorsolateral prefrontal cortex. *Am. J. Psychiatry* 163: 740-742.

CHROMOSOMAL LOCATION

Genetic locus: Grm3 (mouse) mapping to 5 A1.

PRODUCT

mGluR-3 siRNA (m) 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 mGluR-3 shRNA Plasmid (m): sc-61031-SH and mGluR-3 shRNA (m) Lentiviral Particles: sc-61031-V as alternate gene silencing products.

For independent verification of mGluR-3 (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-61031A, sc-61031B and sc-61031C.

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

mGluR-3 siRNA (m) is recommended for the inhibition of mGluR-3 expression in mouse 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 contains 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

mGluR-3 (A-10): sc-271899 is recommended as a control antibody for monitoring of mGluR-3 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 mGluR-3 gene expression knockdown using RT-PCR Primer: mGluR-3 (m)-PR: sc-61031-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.