

mGluR-8a/b/c siRNA (h): sc-61040

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 mGluR-1 and mGluR-5 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. GLuR-8 is a group III metabotropic glutamate receptor. In response to glutamate stimulation, GLuR-8 activates GTP-binding proteins that modulate second-messenger cascades. Alternative splicing of this integral membrane protein produces three isoforms: a, b and c. Human GLuR-8 maps to q31.33 of chromosome 7.

REFERENCES

1. Scherer, S., et al. 1996. Localization of two metabotropic glutamate receptor genes, GRM3 and GRM8, to human chromosome 7q. *Genomics* 2: 230-233.
2. Online Mendelian Inheritance in Man, OMIM™. 1996. Johns Hopkins University, Baltimore, MD. MIM Number: 601116. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
3. Scherer, S., et al. 1997. The human metabotropic glutamate receptor 8 (GRM8) gene: a disproportionately large gene located at 7q31.3-q32.1. *Genomics* 2: 232-236.
4. Takaki, H., et al. 2004. Positive associations of polymorphisms in the metabotropic glutamate receptor type 8 gene (GRM8) with schizophrenia. *Am. J. Med. Genet. B, Neuropsychiatr. Genet.* 128B: 6-14.
5. Cull-Candy, S.G., et al. 2004. Role of distinct NMDA receptor subtypes at central synapses. *Sci. STKE* 2004: re16.
6. Jayakar, S.S., et al. 2004. AMPA receptor regulation mechanisms: future target for safer neuroprotective drugs. *Int. J. Neurosci.* 114: 695-734.
7. SWISS-PROT/TrEMBL (O00222). World Wide Web URL: <http://www.expasy.ch/sprot/sprot-top.html>

CHROMOSOMAL LOCATION

Genetic locus: GRM8 (human) mapping to 7q31.33.

PRODUCT

mGluR-8a/b/c 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 mGluR-8a/b/c shRNA Plasmid (h): sc-61040-SH and mGluR-8a/b/c shRNA (h) Lentiviral Particles: sc-61040-V as alternate gene silencing products.

For independent verification of mGluR-8a/b/c (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-61040A, sc-61040B and sc-61040C.

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-8a/b/c siRNA (h) is recommended for the inhibition of mGluR-8 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

mGluR-8 (4A7): sc-517124 is recommended as a control antibody for monitoring of mGluR-8a/b/c 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-8a/b/c gene expression knockdown using RT-PCR Primer: mGluR-8a/b/c (h)-PR: sc-61040-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.