SANTA CRUZ BIOTECHNOLOGY, INC.

FRRS1L siRNA (h): sc-92770

BACKGROUND

AMPA (α-amino-3-hydroxy-5-methyl-4-isoxazolepropionic acid) receptor is a non-NMDA-type ionotropic transmembrane glutamate receptor that mediates fast synaptic transmission in the central nervous system (CNS). FRRS1L (ferric-chelate reductase 1-like), also known as brain protein CG-6 or C9orf4, is a 344 amino acid single-pass membrane protein that is primarily expressed in adult and fetal brain and is weakly expressed in spinal cord, adult ovary and medulla. FRRS1L is a component of the outer core of AMPAR complex. Auxiliary subunits control the gating properties and surface trafficking of the AMPAR complex and impact their biogenesis and protein processing. FRRS1L consist of one DOMON domain and is encoded by a gene located on human chromosome 9q31.3.

REFERENCES

1. Honoré, T., et al. 1982. The binding of [3H]AMPA, a structural analogue of glutamic acid, to rat brain membranes. J. Neurochem. 38: 173-178.
2. Brinkmeier, H., et al. 1987. Activators of protein kinase C induce myotonia by lowering chloride conductance in muscle. Biochem. Biophys. Res. Commun. 148: 1383-1389.
3. Perkinton, M.S., et al. 1999. Ca^{2+}-permeable AMPA receptors induce phosphorylation of cAMP response element-binding protein through a phosphatidylinositol 3-kinase-dependent stimulation of the mitogen-activated protein kinase signaling cascade in neurons. J. Neurosci. 19: 5861-5874.
4. Chadwick, B.P., et al. 2000. Cloning, mapping, and expression of a novel brain-specific transcript in the familial dysautonomia candidate region on chromosome 9q31. Mamm. Genome 11: 81-83.
5. Beattie, E.C., et al. 2000. Regulation of AMPA receptor endocytosis by a signaling mechanism shared with LTD. Nat. Neurosci. 3: 1291-1300.
6. Ha, B.K., et al. 2002. Kainate-induced excitotoxicity is dependent upon extracellular potassium concentrations that regulate the activity of AMPA/KA type glutamate receptors. J. Neurochem. 83: 934-945.

CHROMOSOMAL LOCATION

Genetic locus: FRRS1L (human) mapping to 9q31.3.

PRODUCT

FRRS1L 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see FRRS1L shRNA Plasmid (h): sc-92770-SH and FRRS1L shRNA (h) Lentiviral Particles: sc-92770-V as alternate gene silencing products.

For independent verification of FRRS1L (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-92770A, sc-92770B and sc-92770C.

PROTOCOLS

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

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 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

FRRS1L siRNA (h) is recommended for the inhibition of FRRS1L 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 µM in 66 µl. 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

FRRS1L (H-8): sc-398692 is recommended as a control antibody for monitoring of FRRS1L 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-IgGκ BP-HRP: sc-516102 or m-IgGκ 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-IgGκ BP-FITC: sc-516140 or m-IgGκ 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 FRRS1L gene expression knockdown using RT-PCR Primer: FRRS1L (h)-PR: sc-92770-PR (20 µl). 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.