SANTA CRUZ BIOTECHNOLOGY, INC.

Grid2ip siRNA (m): sc-75199

BACKGROUND

Grid2ip (glutamate receptor, ionotropic, δ2 (Grid2 or GluR-δ2) interacting protein 1), also known as delphilin, is a postsynaptic scaffolding protein that contains one formin homology 2 (FH2) domain and two PDZ (postsynaptic density-95/discs-large/ZO-1) domains. Expressed in Purkinje cells of the cerebellum and localizing specifically to parallel fiber synapses, Grid2ip interacts with the C-terminus of GluR-δ2 and, via this interaction, links GluR-δ2 with various signaling molecules and the Actin cytoskeleton. GluR-δ2 is a glutamate receptor with an important role in motor learning, cerebellar wiring and synaptic plasticity. Due to alternative splicing events, three Grid2ip isoforms exist, namely L-delphilin, S-delphilin (or delphilin-α) and delphilin-β. Each isoform exhibits individual expression patterns and protein interactions. Isoform 2, delphilin-α, is palmytoylated, a modification that is essential for the enhanced expression of GluR-δ2 on the cell surface. This modification of delphilin-α also mediates the accumulation of delphilin-α in dendritic spines.

REFERENCES

1. Miyagi, Y., et al. 2002. Delphilin: a novel PDZ and formin homology domain-containing protein that synaptically colocalizes and interacts with glutamate receptor δ2 subunit. J. Neurosci. 22: 803-814.
2. Katoh, M. and Katoh, M. 2003. Identification and characterization of human GRID2IP gene and rat Grid2ip gene in silico. Int. J. Mol. Med. 12: 1015-1019.
3. Katoh, M. and Katoh, M. 2004. Identification and characterization of human DIAPH3 gene in silico. Int. J. Mol. Med. 13: 473-478.
4. Yamashita, T., et al. 2005. Identification and characterization of a novel Delphilin variant with an alternative N-terminus. Brain Res. Mol. Brain Res. 141: 83-94.
5. Sonoda, T., et al. 2006. Binding of glutamate receptor δ2 to its scaffold protein, Delphilin, is regulated by PKA. Biochem. Biophys. Res. Commun. 350: 748-752.
6. Matsuda, K., et al. 2006. Characterization of the δ2 glutamate receptor-binding protein delphilin: Splicing variants with differential palmitoylation and an additional PDZ domain. J. Biol. Chem. 281: 25577-25587.

CHROMOSOMAL LOCATION

Genetic locus: Grid2ip (mouse) mapping to 5 G2.

PRODUCT

Grid2ip 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Grid2ip shRNA Plasmid (m): sc-75199-SH and Grid2ip shRNA (m) Lentiviral Particles: sc-75199-V as alternate gene silencing products.

For independent verification of Grid2ip (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-75199A, sc-75199B and sc-75199C.

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

Grid2ip siRNA (m) is recommended for the inhibition of Grid2ip 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 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

Grid2ip (A-4): sc-390952 is recommended as a control antibody for monitoring of Grid2ip 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 Grid2ip gene expression knockdown using RT-PCR Primer: Grid2ip (m)-PR: sc-75199-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.

PROTOCOLS

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