SANTA CRUZ BIOTECHNOLOGY, INC.

DISC-1 siRNA (r): sc-106989

BACKGROUND

The "disrupted in schizophrenia" gene locus DISC is associated with patients afflicted with schizophrenia as a result of chromosomal translocations. DISC-1 encodes a large protein predicted to contain a globular N-terminal domain and a helical C-terminal domain, both of which have the potential to form interactions with other proteins. DISC-1 interacts with proteins involved in the centrosome and cytoskeletal system, including MIP-T3, MAP-1A and nudel; proteins which localize receptors to membranes, including α-actinin-2 and spectrin βIV; and proteins which transduce signals from membrane receptors, including ATF-4 and ATF-5. Therefore, DISC-1 is thought to be involved in intracellular transport, neurite architecture and/or neuronal migration, all of which are thought to be pathogenic in the schizophrenic brain. DISC-1 localizes to the nucleus, whereas mutant DISC-1 localization occurs mainly in the cytoplasm.

REFERENCES

1. Ozeki, Y., et al. 2003. Disrupted in schizophrenia-1 (DISC-1): mutant truncation prevents binding to NUDE-like (nudel) and inhibits neurite outgrowth. Proc. Natl. Acad. Sci. USA 100: 289-294.
2. Morris, J.A., et al. 2003. DISC-1 (disrupted in schizophrenia-1) is a centrosome-associated protein that interacts with MAP-1A, MIP-T3, ATF-4/5 and nudel: regulation and loss of interaction with mutation. Hum. Mol. Genet. 12: 1591-1608.
3. Miyoshi, K., et al. 2003. Disrupted in schizophrenia-1, a candidate gene for schizophrenia, participates in neurite outgrowth. Mol. Psychiatry 8: 685-694.
4. Schurov, I.L., et al. 2004. Expression of developing mouse brain indicates its role in neurodevelopment. Mol. Psychiatry 9: 1100-1110.

CHROMOSOMAL LOCATION

Genetic locus: Disc1 (rat) mapping to 19q12.

PRODUCT

DISC-1 siRNA (r) 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 DISC-1 shRNA Plasmid (r): sc-106989-SH and DISC-1 shRNA (r) Lentiviral Particles: sc-106989-V as alternate gene silencing products.

For independent verification of DISC-1 (r) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-106989A, sc-106989B and sc-106989C.

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.

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

DISC-1 siRNA (r) is recommended for the inhibition of DISC-1 expression in rat 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

DISC-1 (B-2): sc-365591 is recommended as a control antibody for monitoring of DISC-1 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 DISC-1 gene expression knockdown using RT-PCR Primer: DISC-1 (r)-PR: sc-106989-PR (20 µl, 599 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.