SANTA CRUZ BIOTECHNOLOGY, INC.

DIP2A siRNA (h): sc-62212

BACKGROUND

DIP2A (disco-interacting protein 2 homolog A), also known as DIP2, is a 1,571 amino acid nuclear protein. It is one of three human homologs (DIP2A, DIP2B and DIP2C) of the *Drosophila* dip2 (disconnected-interacting protein 2) protein. In *Drosophila,* dip2 interacts with disco, a protein required for neuronal connections in the visual systems of larvae and adults. The closest vertebrate homologs to disco are the basonuclin genes. In mice, DIP2 homologs show restricted expression to the brain. This suggests that, similar to the function of *Drosophila* dip2, vertebrate DIP2 homologs may play a role in the development of the nervous system. Expressed ubiquitously with highest expression in the brain, DIP2A is thought to function in signaling throughout the central nervous system by providing positional clues for axon patterning and pathfinding. Four isoforms of DIP2A exist due to alternative splicing events.

REFERENCES

1. Mukhopadhyay, M., et al. 2002. Cloning, genomic organization and expression pattern of a novel *Drosophila* gene, the disco-interacting protein 2 (DIP2), and its murine homolog. Gene 293: 59-65.
2. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 607711. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
3. DeSousa, D., et al. 2003. A novel double-stranded RNA-binding protein, disco interacting protein 1 (DIP1), contributes to cell fate decisions during *Drosophila* development. J. Biol. Chem. 278: 38040-38050.
4. De Felice, B., et al. 2003. Characterization of DIP1, a novel nuclear protein in *Drosophila melanogaster*. Biochem. Biophys. Res. Commun. 307: 224-228.
5. Bondos, S.E., et al. 2004. Hox transcription factor ultrabithorax Ib physically and genetically interacts with disconnected interacting protein 1, a double-stranded RNA-binding protein. J. Biol. Chem. 279: 26433-26444.

CHROMOSOMAL LOCATION

Genetic locus: DIP2A (human) mapping to 21q22.3.

PRODUCT

DIP2A 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 DIP2A shRNA Plasmid (h): sc-62212-SH and DIP2A shRNA (h) Lentiviral Particles: sc-62212-V as alternate gene silencing products.

For independent verification of DIP2A (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-62212A, sc-62212B and sc-62212C.

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

DIP2A siRNA (h) is recommended for the inhibition of DIP2A 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

DIP2A (4E6): sc-293390 is recommended as a control antibody for monitoring of DIP2A 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 DIP2A gene expression knockdown using RT-PCR Primer: DIP2A (h)-PR: sc-62212-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.