SANTA CRUZ BIOTECHNOLOGY, INC.

DYX2 siRNA (h): sc-95513

BACKGROUND

DYX2 (dyslexia type 2) also known as KIAA0319, is a 1,072 amino acid single-pass transmembrane protein that contains one MANSC domain and two PKD (polycystic kidney disease) domains, which are usually found in the extracellular regions of proteins and are involved in protein-protein interactions. In DYX2, it is likely that its PKD domains mediate the interaction between neurons and glial fibers during neuronal migration. When overexpressed, this plasma membrane protein colocalizes with EEA1 (early endosome antigen 1) in large intracellular vesicles, suggesting that it is endocytosed and recycled. DYX2 is highly expressed in brain cortex, cerebellum, amygdala, putamen and hippocampus. Defects in the gene encoding DYX2 may be the cause of dyslexia type 2, a relatively common disorder that is characterized by reading performance impairment in the absence of sensory or neurologic disability. There are three isoforms of DYX2 that are produced as a result of alternative splicing events.

REFERENCES

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6. Petryshen, T.L., et al. 2009. The genetics of reading disability. Curr. Psychiatry Rep. 11: 149-155.
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8. Gabel, L.A., et al. 2010. Progress towards a cellular neurobiology of reading disability. Neurobiol. Dis. 38: 173-180.
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CHROMOSOMAL LOCATION

Genetic locus: KIAA0319 (human) mapping to 6p22.3.

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.

PRODUCT

DYX2 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 DYX2 shRNA Plasmid (h): sc-95513-SH and DYX2 shRNA (h) Lentiviral Particles: sc-95513-V as alternate gene silencing products.

For independent verification of DYX2 (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-95513A, sc-95513B and sc-95513C.

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

DYX2 siRNA (h) is recommended for the inhibition of DYX2 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor DYX2 gene expression knockdown using RT-PCR Primer: DYX2 (h)-PR: sc-95513-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.