

DYX2 (E-15): sc-167706

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 2 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

1. London, E.R., et al. 2003. A transcription map of the 6p22.3 reading disability locus identifying candidate genes. *BMC Genomics* 4: 25.
2. Cope, N., et al. 2005. Strong evidence that KIAA0319 on chromosome 6p is a susceptibility gene for developmental dyslexia. *Am. J. Hum. Genet.* 76: 581-591.
3. Velayos-Baeza, A., et al. 2007. Alternative splicing in the dyslexia-associated gene KIAA0319. *Mamm. Genome* 18: 627-634.
4. Velayos-Baeza, A., et al. 2008. The dyslexia-associated gene KIAA0319 encodes highly N- and O-glycosylated plasma membrane and secreted isoforms. *Hum. Mol. Genet.* 17: 859-871.
5. Leveque, C., et al. 2009. The dyslexia-associated protein KIAA0319 interacts with adaptor protein 2 and follows the classical clathrin-mediated endocytosis pathway. *Am. J. Physiol., Cell Physiol.* 297: C160-C168.
6. Petryshen, T.L. and Pauls, D.L. 2009. The genetics of reading disability. *Curr. Psychiatry Rep.* 11: 149-155.
7. Dennis, M.Y., et al. 2009. A common variant associated with dyslexia reduces expression of the KIAA0319 gene. *PLoS Genet.* 5: e1000436.
8. Gabel, L.A., et al. 2010. Progress towards a cellular neurobiology of reading disability. *Neurobiol. Dis.* 38: 173-180.

CHROMOSOMAL LOCATION

Genetic locus: KIAA0319 (human) mapping to 6p22.3; D130043K22Rik (mouse) mapping to 13 A3.1.

SOURCE

DYX2 (E-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an extracellular domain of DYX2 of human origin.

STORAGE

Store at 4° C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-167706 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

DYX2 (E-15) is recommended for detection of DYX2 of human origin and D130043K22Rik of mouse origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

DYX2 (E-15) is also recommended for detection of DYX2 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for DYX2 siRNA (h): sc-95513, D130043K22Rik siRNA (m): sc-142780, DYX2 shRNA Plasmid (h): sc-95513-SH, D130043K22Rik shRNA Plasmid (m): sc-142780-SH, DYX2 shRNA (h) Lentiviral Particles: sc-95513-V and D130043K22Rik shRNA (m) Lentiviral Particles: sc-142780-V.a.

Molecular Weight of DYX2 118 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

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