SANTA CRUZ BIOTECHNOLOGY, INC.

SYNDIG1 siRNA (h): sc-72734

BACKGROUND

Synapse differentiation-inducing gene protein 1 (SYNDIG1), also known as DSPC2, IFITMD5, TMEM90B or C20orf39, is a 258 single-pass type II membrane protein that belongs to the CD225/Dispanin family. SYNDIG1 may regulate the content of the AMPA receptor at new synapses and contribute to postsynaptic development and maturation. As a homodimer, SYNDIG1 interacts with GRIA1 and GRIA2. The gene encoding TMEM90B maps to human chromosome 20p11.21. Comprising approximately 2% of the human genome, chromosome 20 contains nearly 63 million bases that encode over 600 genes, some of which are associated with Creutzfeldt-Jakob disease, amyotrophic lateral sclerosis, spinal muscular atrophy, ring chromosome 20 epilepsy syndrome and Alagille syndrome. Additionally, chromosome 20 contains a region with numerous genes which are thought to be important for seminal production and may be potential targets for male contraception.

REFERENCES

1. Ville, D., et al. 2006. Early pattern of epilepsy in the ring chromosome 20 syndrome. Epilepsia 47: 543-549.
2. Joó, J.G., et al. 2006. Trisomy 20 mosaicism and nonmosaic trisomy 20: a report of 2 cases. J. Reprod. Med. 51: 209-212.
3. Fulbright, R.K., et al. 2006. The imaging appearance of Creutzfeldt-Jakob disease caused by the E200K mutation. Magn. Reson. Imaging 24: 1121-1129.
4. Lundwall, A. 2007. A locus on chromosome 20 encompassing genes that are highly expressed in the epididymis. Asian J. Androl. 9: 540-544.
5. Robert, M.L., et al. 2007. Alagille syndrome with deletion 20p12.2-p12.3 and hypoplastic left heart. Clin. Dysmorphol. 16: 241-246.
6. Elghezal, H., et al. 2007. Ring chromosome 20 syndrome without deletions of the subtelomeric and CHRNA4—KCNQ2 genes loci. Eur. J. Med. Genet. 50: 441-445.
7. O'Rand, M.G., et al. 2007. Eppin: an epididymal protease inhibitor and a target for male contraception. Soc. Reprod. Fertil. Suppl. 63: 445-453.
8. Kalashnikova, E., et al. 2010. SYNDIG1: an activity-regulated, AMPA receptor-interacting transmembrane protein that regulates excitatory synapse development. Neuron 65: 80-93.

CHROMOSOMAL LOCATION

Genetic locus: SYNDIG1 (human) mapping to 20p11.21.

PRODUCT

SYNDIG1 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 SYNDIG1 shRNA Plasmid (h): sc-72734-SH and SYNDIG1 shRNA (h) Lentiviral Particles: sc-72734-V as alternate gene silencing products.

For independent verification of SYNDIG1 (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-72734A, sc-72734B and sc-72734C.

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

SYNDIG1 siRNA (h) is recommended for the inhibition of SYNDIG1 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

SYNDIG1 (C-1): sc-515627 is recommended as a control antibody for monitoring of SYNDIG1 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 SYNDIG1 gene expression knockdown using RT-PCR Primer: SYNDIG1 (h)-PR: sc-72734-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.