

TBC1D13 siRNA (m): sc-154091

BACKGROUND

TBC1D13 (TBC1 domain family member 13) is a 400 amino acid protein that contains one Rab-GAP TBC domain. Existing as two alternatively spliced isoforms, TBC1D13 may act as a GTPase-activating protein for Rab family proteins. The gene that encodes TBC1D13 contains 23,229 bases and maps to human chromosome 9q34.11. Housing over 900 genes, chromosome 9 comprises nearly 4% of the human genome. Hereditary hemorrhagic telangiectasia, which is characterized by harmful vascular defects, and Familial dysautonomia, are both associated with chromosome 9. Mutations in DFNB31, located on human chromosome 9, are associated with Usher syndrome type 2, which is characterized by severe rod-cone dystrophy and varying degrees of hearing impairment. Notably, chromosome 9 encompasses the largest interferon family gene cluster.

REFERENCES

1. Burmeister, T., Schwartz, S., Taubald, A., Jost, E., Lipp, T., Schneller, F., Diedrich, H., Thomssen, H., Mey, U.J., Eucker, J., Rieder, H., Gökbüget, N., Hoelzer, D. and Thiel, E. 2007. Atypical Bcr-Abl mRNA transcripts in adult acute lymphoblastic leukemia. *Haematologica* 92: 1699-1702.
2. Ebermann, I., Scholl, H.P., Charbel Issa, P., Becirovic, E., Lamprecht, J., Jurklics, B., Millán, J.M., Aller, E., Mitter, D. and Bolz, H. 2007. A novel gene for Usher syndrome type 2: mutations in the long isoform of whirlin are associated with retinitis pigmentosa and sensorineural hearing loss. *Hum. Genet.* 121: 203-211.
3. Cottin, V., Dupuis-Girod, S., Lesca, G. and Cordier, J.F. 2007. Pulmonary vascular manifestations of hereditary hemorrhagic telangiectasia (Rendu-Osler disease). *Respiration* 74: 361-378.
4. Zeitz, M.J., Marella, N.V., Malyavantham, K.S., Goetze, S., Bode, J., Raska, I. and Berezney, R. 2009. Organization of the amplified type I interferon gene cluster and associated chromosome regions in the interphase nucleus of human osteosarcoma cells. *Chromosome Res.* 17: 305-319.
5. Ishibashi, K., Kanno, E., Itoh, T. and Fukuda, M. 2009. Identification and characterization of a novel Tre-2/Bub2/Cdc16 (TBC) protein that possesses Rab3A-GAP activity. *Genes Cells* 14: 41-52.
6. Gold-von Simson, G., Goldberg, J.D., Rolnitzky, L.M., Mull, J., Leyne, M., Voustaniouk, A., Slaugenhaupt, S.A. and Axelrod, F.B. 2009. Kinetin in familial dysautonomia carriers: implications for a new therapeutic strategy targeting mRNA splicing. *Pediatr. Res.* 65: 341-346.
7. Axelrod, F.B., Hilz, M.J., Berlin, D., Yau, P.L., Javier, D., Sweat, V., Bruehl, H. and Convit, A. 2010. Neuroimaging supports central pathology in familial dysautonomia. *J. Neurol.* 257: 198-206.
8. Shimbo, T., Tanemura, A., Yamazaki, T., Tamai, K., Katayama, I. and Kaneda, Y. 2010. Serum anti-BPAG1 auto-antibody is a novel marker for human melanoma. *PLoS ONE* 5: e10566.
9. Audo, I., Bujakowska, K., Mohand-Saïd, S., Tronche, S., Lancelot, M.E., Antonio, A., Germain, A., Lonjou, C., Carpentier, W., Sahel, J.A., Bhattacharya, S. and Zeitz, C. 2011. A novel DFNB31 mutation associated with Usher type 2 syndrome showing variable degrees of auditory loss in a consanguineous Portuguese family. *Mol. Vis.* 17: 1598-1606.

CHROMOSOMAL LOCATION

Genetic locus: Tbc1d13 (mouse) mapping to 2 B.

PRODUCT

TBC1D13 siRNA (m) 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see TBC1D13 shRNA Plasmid (m): sc-154091-SH and TBC1D13 shRNA (m) Lentiviral Particles: sc-154091-V as alternate gene silencing products.

For independent verification of TBC1D13 (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-154091A, sc-154091B and sc-154091C.

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 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

TBC1D13 siRNA (m) is recommended for the inhibition of TBC1D13 expression in mouse 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 μ M in 66 μ l. 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 TBC1D13 gene expression knockdown using RT-PCR Primer: TBC1D13 (m)-PR: sc-154091-PR (20 μ l). 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.