SANTA CRUZ BIOTECHNOLOGY, INC.

TBC1D15 siRNA (h): sc-95660

BACKGROUND

GTPase-activating proteins (GAPs) accelerate the intrinsic rate of GTP hydrolysis of Ras-related proteins, resulting in downregulation of their active form. TBC1D15 (TBC1 domain family, member 15) is a 691 amino acid protein that belongs to a family of proteins which share a ~200 amino acid TBC domain that may convey a role in the regulation of cell growth and differentiation. Containing one Rab-GAP TBC domain, TBC1D15 is thought to function as a GTPase-activating protein for Rab proteins, possibly participating in Rab-mediated cell cycle control and, ultimately, cellular differentiation. Abundantly expressed in liver, heart and testis, TBC1D1 is present as two isoforms produced by alternative splicing and is encoded by a gene which maps to human chromosome 12.

REFERENCES

1. Zhang, X.M., Walsh, B., Mitchell, C.A. and Rowe, T. 2005. TBC domain family, member 15 is a novel mammalian Rab GTPase-activating protein with substrate preference for Rab 7. Biochem. Biophys. Res. Commun. 335: 154-161.
2. Itoh, T., Satoh, M., Kanno, E. and Fukuda, M. 2006. Screening for target Rabs of TBC (Tre-2/Bub2/Cdc16) domain-containing proteins based on their Rab-binding activity. Genes Cells 11: 1023-1037.
3. Jeronimo, C., Forget, D., Bouchard, A., Li, Q., Chua, G., Poitras, C., Therien, C., Bergeron, D., Bourassa, S., Greenblatt, J., Chabot, B., Poirier, G.G., Hughes, T.R., Blanchette, M., Price, D.H. and Coulombe, B. 2007. Systematic analysis of the protein interaction network for the human transcription machinery reveals the identity of the 7SK capping enzyme. Mol. Cell 27: 262-274.
4. 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.
5. Online Mendelian Inheritance in Man, OMIM™. 2009. Johns Hopkins University, Baltimore, MD. MIM Number: 612662. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/

CHROMOSOMAL LOCATION

Genetic locus: TBC1D15 (human) mapping to 12q21.1.

PRODUCT

TBC1D15 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 TBC1D15 shRNA Plasmid (h): sc-95660-SH and TBC1D15 shRNA (h) Lentiviral Particles: sc-95660-V as alternate gene silencing products.

For independent verification of TBC1D15 (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-95660A, sc-95660B and sc-95660C.

RESEARCH USE

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

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

TBC1D15 siRNA (h) is recommended for the inhibition of TBC1D15 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 TBC1D15 gene expression knockdown using RT-PCR Primer: TBC1D15 (h)-PR: sc-95660-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Bhattacharya, A., et al. 2023. A lysosome membrane regeneration pathway depends on TBC1D15 and autophagic lysosomal reformation proteins. Nat. Cell Biol. 25: 685-698.

PROTOCOLS

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