

TBC1D16 siRNA (m): sc-154094

BACKGROUND

GTPase-activating proteins (GAPs) accelerate the intrinsic rate of GTP hydrolysis of Ras-related proteins, resulting in downregulation of their active form. TBC1D16 (TBC1 domain family, member 16) is a 767 amino acid protein containing one Rab-GAP TBC domain. TBC1D16 belongs to a family of proteins that share a TBC domain of about 200 amino acids that may convey a role in the regulation of cell growth and differentiation. TBC1D16 is thought to function as a GTPase-activating protein for Rab proteins, possibly participating in Rab-mediated cell cycle control and, ultimately, cellular differentiation. TBC1D16 is encoded by a gene located on human chromosome 17, which comprises over 2.5% of the human genome and encodes over 1,200 genes.

REFERENCES

1. Neuwald, A.F. 1997. A shared domain between a spindle assembly checkpoint protein and Ypt/Rab-specific GTPase-activators. *Trends Biochem. Sci.* 22: 243-244.
2. Albert, S., Will, E. and Gallwitz, D. 1999. Identification of the catalytic domains and their functionally critical arginine residues of two yeast GTPase-activating proteins specific for Ypt/Rab transport GTPases. *EMBO J.* 18: 5216-5225.
3. Rak, A., Fedorov, R., Alexandrov, K., Albert, S., Goody, R.S., Gallwitz, D. and Scheidig, A.J. 2000. Crystal structure of the GAP domain of Gyp1p: first insights into interaction with Ypt/Rab proteins. *EMBO J.* 19: 5105-5113.
4. 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 Rab7. *Biochem. Biophys. Res. Commun.* 335: 154-161.
5. 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.
6. Wainszelbaum, M.J., Charron, A.J., Kong, C., Kirkpatrick, D.S., Srikanth, P., Barbieri, M.A., Gygi, S.P. and Stahl, P.D. 2008. The hominoid-specific onco-gene TBC1D3 activates Ras and modulates epidermal growth factor receptor signaling and trafficking. *J. Biol. Chem.* 283: 13233-13242.
7. 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.

CHROMOSOMAL LOCATION

Genetic locus: Tbc1d16 (mouse) mapping to 11 E2.

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

TBC1D16 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 TBC1D16 shRNA Plasmid (m): sc-154094-SH and TBC1D16 shRNA (m) Lentiviral Particles: sc-154094-V as alternate gene silencing products.

For independent verification of TBC1D16 (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-154094A, sc-154094B and sc-154094C.

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

TBC1D16 siRNA (m) is recommended for the inhibition of TBC1D16 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 TBC1D16 gene expression knockdown using RT-PCR Primer: TBC1D16 (m)-PR: sc-154094-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.