SANTA CRUZ BIOTECHNOLOGY, INC.

TBC1D2 siRNA (h): sc-92736

BACKGROUND

GTPase-activating proteins (GAPs) accelerate the intrinsic rate of GTP hydrolysis of Ras-related proteins, resulting in downregulation of their active form. TBC1D2 (TBC1 domain family member 2), also known as Armus or PARIS-1 (prostate antigen recognized and identified by SEREX 1), is a 928 amino acid protein containing a Rab-GAP TBC domain and a PH domain. Localizing to cytoplasm, cytoplasmic vesicles and cell junctions, TBC1D2 is expressed in a broad range of tissues, including kidney, liver, lung and placenta, as well as in keratinocytes and epithelia-containing organs. TBC1D2 functions as a GTPase-activating protein for RAB7, and also acts as a linker between RAB7 and RAC1, which leads to RAB7A inactivation and inhibition of E-cadherin degradation. Existing as six alternatively spliced isoforms, the gene encoding TBC1D2 maps to human chromosome 9q22.33.

REFERENCES

1. Zhou, Y., et al. 2002. Serological cloning of PARIS-1: a new TBC domain-containing, immunogenic tumor antigen from a prostate cancer cell line. Biochem. Biophys. Res. Commun. 290: 830-838.
2. Humphray, S.J., et al. 2004. DNA sequence and analysis of human chromosome 9. Nature 429: 369-374.
3. Ishibashi, K., et al. 2009. Identification and characterization of a novel Tre-2/Bub2/Cdc16 (TBC) protein that possesses Rab3A-GAP activity. Genes Cells 14: 41-52.
4. Yasuda, M., et al. 2010. Identification of a tumour associated antigen in lung cancer patients with asbestos exposure. Anticancer Res. 30: 2631-2639.
5. Frasa, M.A., et al. 2010. Armus is a Rac1 effector that inactivates Rab7 and regulates E-cadherin degradation. Curr. Biol. 20: 198-208.
6. Chotard, L., et al. 2010. TBC-2 regulates RAB-5/RAB-7-mediated endosomal trafficking in *Caenorhabditis elegans*. Mol. Biol. Cell 21: 2285-2296.
7. Cavanillas, M.L., et al. 2011. Replication of top markers of a genome-wide association study in multiple sclerosis in Spain. Genes Immun. 12: 110-115.

CHROMOSOMAL LOCATION

Genetic locus: TBC1D2 (human) mapping to 9q22.33.

PRODUCT

TBC1D2 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 TBC1D2 shRNA Plasmid (h): sc-92736-SH and TBC1D2 shRNA (h) Lentiviral Particles: sc-92736-V as alternate gene silencing products.

For independent verification of TBC1D2 (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-92736A, sc-92736B and sc-92736C.

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

TBC1D2 siRNA (h) is recommended for the inhibition of TBC1D2 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 TBC1D2 gene expression knockdown using RT-PCR Primer: TBC1D2 (h)-PR: sc-92736-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

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