

## TBC1D2 siRNA (m): sc-154097

### 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

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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 (mouse) mapping to 4 B1.

### PRODUCT

TBC1D2 siRNA (m) is a target-specific 19-25 nt siRNA designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see TBC1D2 shRNA Plasmid (m): sc-154097-SH and TBC1D2 shRNA (m) Lentiviral Particles: sc-154097-V as alternate gene silencing products.

### PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.

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

### APPLICATIONS

TBC1D2 siRNA (m) is recommended for the inhibition of TBC1D2 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  $\mu$ M in 66  $\mu$ 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 TBC1D2 gene expression knockdown using RT-PCR Primer: TBC1D2 (m)-PR: sc-154097-PR (20  $\mu$ 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.