SANTA CRUZ BIOTECHNOLOGY, INC.

TBC1D4 siRNA (h): sc-61654

BACKGROUND

TBC1 domain family member 4 (TBC1D4), also designated AS160, can be Insulin- and/or Akt1-induced. Insulin-stimulated phosphorylation is required for GLUT4 translocation. TBC1D4 may play a role as a GTPase activating protein for proteins in the Rab family. It is expressed primarily in skeletal muscle and heart, as well as spleen, lymph node and leukocytes. Defects in the TBC1D4 gene may cause atopic dermatitis (AD), sometimes referred to as eczema, an atopic chronic skin disease. The skin of affected individuals reacts to irritants or allergens and becomes red, flaky and itchy. The skin is also more vulnerable to inflammations, and symptoms can grow or disappear over time.

REFERENCES

1. Kane, S., et al. 2002. A method to identify serine kinase substrates. Akt phosphorylates a novel adipocyte protein with a Rab GTPase-activating protein (GAP) domain. J. Biol. Chem. 277: 22115-22118.
2. Sano, H., et al. 2003. Insulin-stimulated phosphorylation of a Rab GTPase-activating protein regulates Glut4 translocation. J. Biol. Chem. 278: 14599-14602.
3. Bruss, M.D., et al. 2004. Increased phosphorylation of Akt substrate of 160 kDa (AS160) in muscle in response to Insulin or contractile activity. Diabetes 54: 41-50.
4. Zeigerer, A., et al. 2004. Insulin stimulation of Glut4 exocytosis, but not its inhibition of endocytosis, is dependent on Rab GAP AS160. Mol. Biol. Cell 15: 4406-4415.
5. Matsumoto, Y., et al. 2004. Upregulation of the transcript level of GTPase activating protein KIAA0603 in T cells from patients with atopic dermatitis. FEBS Lett. 572: 135-140.
6. Beausoleil, S.A., et al. 2004. Large-scale characterization of HeLa cell nuclear phosphoproteins. Proc. Natl. Acad. Sci. USA 101: 12130-12135.

CHROMOSOMAL LOCATION

Genetic locus: TBC1D4 (human) mapping to 13q22.2.

PRODUCT

TBC1D4 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 TBC1D4 shRNA Plasmid (h): sc-61654-SH and TBC1D4 shRNA (h) Lentiviral Particles: sc-61654-V as alternate gene silencing products.

For independent verification of TBC1D4 (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-61654A, sc-61654B and sc-61654C.

PROTOCOLS

See our web site at 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 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

TBC1D4 siRNA (h) is recommended for the inhibition of TBC1D4 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 TBC1D4 gene expression knockdown using RT-PCR Primer: TBC1D4 (h)-PR: sc-61654-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. Mendes, A.I., et al. 2010. Protein kinase WNK1 promotes cell surface expression of glucose transporter GLUT1 by regulating a Tre-2/USP6-BUB2-Cdc16 domain family member 4 (TBC1D4)-Rab8A complex. J. Biol. Chem. 285: 39117-39126.

RESEARCH USE

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