SANTA CRUZ BIOTECHNOLOGY, INC.

TRB-1 siRNA (h): sc-77704

BACKGROUND

The phosphorylation and dephosphorylation of proteins on serine and threonine residues is an essential means of regulating a broad range of cellular functions in eukaryotes, including cell division, homeostasis and apoptosis. A group of proteins that are intimately involved in this process are the serine/threonine (Ser/Thr) protein kinases. TRB-1 (tribbles homolog 1), also known as C8FW, GIG2 or TRB1, is a 372 amino acid protein that contains one protein kinase domain and belongs to the Ser/Thr protein kinase superfamily. Expressed ubiquitously with highest expression in bone marrow, thyroid gland, skeletal muscle and pancreas, TRB-1 interacts with MAPK kinases and is thought to regulate the activation of MAP kinses, possibly controlling MAP kinase cascades. The gene encoding TRB-1 maps to human chromosome 8, which consists of nearly 146 million base pairs, houses more than 800 genes and is associated with a variety of diseases and malignancies.

REFERENCES

1. Wilkin, F., et al. 1997. Characterization of a phosphoprotein whose mRNA is regulated by the mitogenic pathways in dog thyroid cells. Eur. J. Biochem. 248: 660-668.
2. Wu, M., et al. 2003. SINK is a p65-interacting negative regulator of NFκB-dependent transcription. J. Biol. Chem. 278: 27072-27079.
3. Storlazzi, C.T., et al. 2004. Identification of a commonly amplified 4.3 Mb region with overexpression of C8FW, but not Myc in Myc-containing double minutes in myeloid malignancies. Hum. Mol. Genet. 13: 1479-1485.
4. Kiss-Toth, E., et al. 2004. Human tribbles, a protein family controlling mitogen-activated protein kinase cascades. J. Biol. Chem. 279: 42703-42708.
5. Hegedus, Z., et al. 2006. Tribbles: novel regulators of cell function; evolutionary aspects. Cell. Mol. Life Sci. 63: 1632-1641.
6. Online Mendelian Inheritance in Man, OMIM™. 2006. Johns Hopkins University, Baltimore, MD. MIM Number: 609461. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/

CHROMOSOMAL LOCATION

Genetic locus: TRIB1 (human) mapping to 8q24.13.

PRODUCT

TRB-1 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 TRB-1 shRNA Plasmid (h): sc-77704-SH and TRB-1 shRNA (h) Lentiviral Particles: sc-77704-V as alternate gene silencing products.

For independent verification of TRB-1 (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-77704A, sc-77704B and sc-77704C.

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

TRB-1 siRNA (h) is recommended for the inhibition of TRB-1 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.

GENE EXPRESSION MONITORING

TRB-1 (E-7): sc-393536 is recommended as a control antibody for monitoring of TRB-1 gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor TRB-1 gene expression knockdown using RT-PCR Primer: TRB-1 (h)-PR: sc-77704-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. Aynaud, M.M., et al. 2012. Human Tribbles 3 protects nuclear DNA from cytidine deamination by APOBEC3A. J. Biol. Chem. 287: 39182-39192.

RESEARCH USE

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