SANTA CRUZ BIOTECHNOLOGY, INC.

T2BP siRNA (h): sc-89114

BACKGROUND

T2BP (TRAF2-binding protein), also known as TIFA (TRAF-interacting protein with FHA domain-containing protein A), putative MAPK-activating protein PM14 or putative NFκB-activating protein 20, is a 184 amino acid protein that contains one FHA domain and exists as a homotrimer. T2BP acts as an adapter protein that mediates the IRAK-1 and TRAF6 interaction following IL-1 stimulation, resulting in the downstream activation of NFκB and Fos pathways. Leading to the activation of Tak1 and IKK through a proteasome-independent mechanism, T2BP induces the oligomerization and polyubiquitination of TRAF6. The gene that encodes T2BP contains 10,278 bases and maps to human chromosome 4q25. Housing nearly 900 genes, chromosome 4 represents approximately 6% of the human genome and is associated with Huntington's disease, Ellis-van Creveld syndrome, methylmalonic acidemia and polycystic kidney disease.

REFERENCES

1. Kalchman, M.A., et al. 1996. Huntingtin is ubiquitinated and interacts with a specific ubiquitin-conjugating enzyme. J. Biol. Chem. 271: 19385-19394.
2. Krakow, D., et al. 2000. Exclusion of the Ellis-van Creveld region on chromosome 4p16 in some families with asphyxiating thoracic dystrophy and short-rib polydactyly syndromes. Eur. J. Hum. Genet. 8: 645-648.
3. Sommardahl, C., et al. 2001. Phenotypic variations of orpk mutation and chromosomal localization of modifiers influencing kidney phenotype. Physiol. Genomics 7: 127-134.
4. Kanamori, M., et al. 2002. T2BP, a novel TRAF2 binding protein, can activate NFκB and AP-1 without TNF stimulation. Biochem. Biophys. Res. Commun. 290: 1108-1113.
5. Dobson, C.M., et al. 2002. Identification of the gene responsible for the cblA complementation group of vitamin B12-responsive methylmalonic acidemia based on analysis of prokaryotic gene arrangements. Proc. Natl. Acad. Sci. USA 99: 15554-15559.
6. Takatsuna, H., et al. 2003. Identification of TIFA as an adapter protein that links tumor necrosis factor receptor-associated factor 6 (TRAF6) to interleukin-1 (IL-1) receptor-associated kinase-1 (IRAK-1) in IL-1 receptor signaling. J. Biol. Chem. 278: 12144-12150.

CHROMOSOMAL LOCATION

Genetic locus: TIFA (human) mapping to 4q25.

PRODUCT

T2BP 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 T2BP shRNA Plasmid (h): sc-89114-SH and T2BP shRNA (h) Lentiviral Particles: sc-89114-V as alternate gene silencing products.

For independent verification of T2BP (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-89114A, sc-89114B and sc-89114C.

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

T2BP siRNA (h) is recommended for the inhibition of T2BP 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 T2BP gene expression knockdown using RT-PCR Primer: T2BP (h)-PR: sc-89114-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. Ding, N., et al. 2013. TIFA upregulation after hypoxia-reoxygenation is TLR4- and MyD88-dependent and associated with HMGB1 upregulation and release. Free Radic. Biol. Med. 63: 361-367.

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.