SANTA CRUZ BIOTECHNOLOGY, INC.

TIF1β siRNA (h): sc-38550

BACKGROUND

TIF1β, for transcriptional intermediary factor 1β, also designated KAP1 (for KRAB-associated protein 1), TF1β and TRIM28 (for tripartif motif-containing 28), is a member of the tripartif motif family characterized by three zinc-binding domains, a RING finger, B-boxes and a coiled-coil domain. Like TIF1α, TIF1β contains both a Cys/His PHD (plant homeodomain) finger and bromodomain that form a cooperative unit required for transcriptional repression. TIF1β mediates transcriptional control by interaction with the Krüppel-associated box (KRAB) repression domain found in many transcription factors and by binding DNA through its zinc finger. The human TIF1β gene maps to human chromosome 19q13.43 and encodes an 835 amino acid nuclear protein.

CHROMOSOMAL LOCATION

Genetic locus: TRIM28 (human) mapping to 19q13.43.

PRODUCT

TIF1β 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 TIF1β shRNA Plasmid (h): sc-38550-SH and TIF1β shRNA (h) Lentiviral Particles: sc-38550-V as alternate gene silencing products.

For independent verification of TIF1β (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-38550A, sc-38550B and sc-38550C.

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

TIF1β siRNA (h) is recommended for the inhibition of TIF1β 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

TIF1β (D-7): sc-515790 is recommended as a control antibody for monitoring of TIF1β 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).

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor TIF1β gene expression knockdown using RT-PCR Primer: TIF1β (h)-PR: sc-38550-PR (20 µl, 422 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Malewicz, M., et al. 2011. Essential role for DNA-PK-mediated phosphorylation of NR4A nuclear orphan receptors in DNA double-strand break repair. Genes Dev. 25: 2031-2040.
2. Nishitsuji, H., et al. 2015. ZNF10 inhibits HIV-1 LTR activity through interaction with NFκB and Sp1 binding motifs. FEBS Lett. 589: 2019-2025.
3. Kuo, C.Y., et al. 2016. RNF4 regulates DNA double-strand break repair in a cell cycle-dependent manner. Cell Cycle 15: 787-798.
4. Li, X., et al. 2017. Chloroquine triggers Epstein-Barr virus replication through phosphorylation of KAP1/TRIM28 in Burkitt lymphoma cells. PLoS Pathog. 13: e1006249.
5. Han, B., et al. 2018. FOXC1-induced non-canonical WNT5A-MMP7 signaling regulates invasiveness in triple-negative breast cancer. Oncogene 37: 1399-1408.
6. Sakamoto, A., et al. 2018. Cross-talk between the transcription factor Sp1 and C/EBPβ modulates TGFβ1 production to negatively regulate the expression of chemokine RANTES. Heliyon 4: e00679.
7. Yamaguchi, R., et al. 2018. Transcription factor specificity protein 1 modulates TGFβ1/Smad signaling to negatively regulate SIGIRR expression by human M1 macrophages stimulated with substance P. Cytokine 108: 24-36.
8. Li, X., et al. 2018. KRAB-ZFP repressors enforce quiescence of oncogenic human herpesviruses. J. Virol. 92: e00298-18.
9. Zhang, P.P., et al. 2018. Expression of TRIM28 correlates with proliferation and Bortezomib-induced apoptosis in B-cell non-Hodgkin lymphoma. Leuk. Lymphoma 59: 2639-2649.
10. Li, M., et al. 2020. TRIM28 functions as the SUMO E3 ligase for PCNA in prevention of transcription induced DNA breaks. Proc. Natl. Acad. Sci. USA 117: 23588-23596.

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.