SANTA CRUZ BIOTECHNOLOGY, INC.

TRAF6 siRNA (m): sc-36718

BACKGROUND

Tumor necrosis factor receptor-associated factor 6 (TRAF6) regulates adaptive immunity, innate immunity and bone metabolism. TRAF6 is a ubiquitin (Ub) ligase that mediates the activation of protein kinases, such as transforming growth factor β-activated kinase (TAK1) and IκB kinase (IKK), by catalyzing the formation of a unique polyubiquitin chain linked through Lys 63 of Ub. TRAF6 is essential for activating NFκB signaling pathway in response to interleukin-1 and Toll-like receptor ligands. The coiled-coil domain of TRAF6 is essential for its auto-ubiquitination and activating NFκB signaling pathway. TRAF6 interacts with various protein kinases, including IRAK-1/IRAK, Src and PKC ζ, which provides a link between distinct signaling pathways.

CHROMOSOMAL LOCATION

Genetic locus: Traf6 (mouse) mapping to 2 E2.

PRODUCT

TRAF6 siRNA (m) 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 TRAF6 shRNA Plasmid (m): sc-36718-SH and TRAF6 shRNA (m) Lentiviral Particles: sc-36718-V as alternate gene silencing products.

For independent verification of TRAF6 (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-36718A, sc-36718B and sc-36718C.

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

TRAF6 siRNA (m) is recommended for the inhibition of TRAF6 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 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

TRAF6 (D-10): sc-8409 is recommended as a control antibody for monitoring of TRAF6 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 TRAF6 gene expression knockdown using RT-PCR Primer: TRAF6 (m)-PR: sc-36718-PR (20 µl, 413 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Song, Z., et al. 2012. Crucial role of CD40 signaling in vascular wall cells in neointimal formation and vascular remodeling after vascular interventions. Arterioscler. Thromb. Vasc. Biol. 32: 50-64.
2. Gupta, P., et al. 2014. Leishmania donovani targets tumor necrosis factor receptor-associated factor (TRAF) 3 for impairing TLR4-mediated host response. FASEB J. 28: 1756-1768.
3. Rosenberger, C.M., et al. 2014. Characterization of innate responses to influenza virus infection in a novel lung type I epithelial cell model. J. Gen. Virol. 95: 350-362.
4. Vashishta, M., et al. 2015. Pneumococal surface protein A (PspA) regulates programmed death ligand 1 expression on dendritic cells in a Toll-like receptor 2 and calcium dependent manner. PLoS ONE 10: e0133601.
5. Wang, H., et al. 2015. Tumor necrosis factor receptor-associated factor 6 promotes migration of rheumatoid arthritis fibroblast-like synoviocytes. Mol. Med. Rep. 11: 2761-2766.
6. Chadha, A., et al. 2015. Suppressive role of neddylation in dendritic cells during *Mycobacterium tuberculosis* infection. Tuberculosis 95: 599-607.
7. Lu, Y., et al. 2019. Analgesic effect of resveratrol on colitis-induced visceral pain via inhibition of TRAF6/NFκB signaling pathway in the spinal cord. Brain Res. 1724: 146464.
8. Yan, W., et al. 2020. Sirt1-ROS-TRAF6 signaling-induced pyroptosis contributes to early injury in ischemic mice. Neurosci. Bull. 36: 845-859.
9. Liu, M., et al. 2020. Macrophage K63-linked ubiquitination of YAP promotes its nuclear localization and exacerbates atherosclerosis. Cell Rep. 32: 107990.
10. Du, S., et al. 2020. IL-17 stimulates the expression of CCL2 in cardiac myocytes via Act1/TRAF6/p38MAPK-dependent AP-1 activation. Scand. J. Immunol. 91: e12840.
11. Chellaiah, M.A. 2021. L-Plastin phosphorylation: possible regulation by a TNFR1 signaling cascade in osteoclasts. Cells 10: 2432.

RESEARCH USE

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