SANTA CRUZ BIOTECHNOLOGY, INC.

NFATc2IP siRNA (h): sc-93159

BACKGROUND

NFATc2IP (NFATC2-interacting protein), also known as NIP45, is a 419 amino acid protein that localizes to both the nucleus and the cytoplasm and contains one ubiquitin-like domain. Interacting with NFATc2, TRAF1 and TRAF2, NFATc2IP plays a role in the inducible expression of cytokines in T-cells, specifically by enhancing NFATc2-induced interleukin (IL) production. NFATc2IP exists as three alternatively spliced isoforms and is subject to post-translational methylation; an event which augments NFATc2IP-regulated cytokine production. The gene encoding NFATc2IP maps to human chromosome 16, which encodes over 900 genes and comprises nearly 3% of the human genome. The GAN gene is located on chromosome 16 and, with mutation, may lead to giant axonal neuropathy, a nervous system disorder characterized by increasing malfunction with growth. The rare disorder Rubinstein-Taybi syndrome is also associated with chromosome 16, as is Crohn's disease, which is a gastrointestinal inflammatory condition.

REFERENCES

1. Rao, A. 1994. NF-ATp: a transcription factor required for the co-ordinate induction of several cytokine genes. Immunol. Today 15: 274-281.
2. Schneider, G., et al. 1995. The inducible transcription factor NF-AT plays an important role in the activation of the murine interleukin-4 promoter. Immunobiology 193: 268-272.
3. Hodge, M.R., et al. 1996. NF-AT-driven interleukin-4 transcription potentiated by NIP45. Science 274: 1903-1905.
4. Rengarajan, J., et al. 2000. Sequential involvement of NFAT and Egr transcription factors in Fas_L regulation. Immunity 12: 293-300.
5. Lieberson, R., et al. 2001. Tumor necrosis factor receptor-associated factor (TRAF)2 represses the T helper cell type 2 response through interaction with NFAT-interacting protein (NIP45). J. Exp. Med. 194: 89-98.
6. Mowen, K.A., et al. 2004. Arginine methylation of NIP45 modulates cytokine gene expression in effector T lymphocytes. Mol. Cell 15: 559-571.
7. Novatchkova, M., et al. 2005. Proteins with two SUMO-like domains in chromatin-associated complexes: the RENi (Rad60-Esc2-NIP45) family. BMC Bioinformatics 6: 22.

CHROMOSOMAL LOCATION

Genetic locus: NFATC2IP (human) mapping to 16p11.2.

PRODUCT

NFATc2IP 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 NFATc2IP shRNA Plasmid (h): sc-93159-SH and NFATc2IP shRNA (h) Lentiviral Particles: sc-93159-V as alternate gene silencing products.

For independent verification of NFATc2IP (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-93159A, sc-93159B and sc-93159C.

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

NFATc2IP siRNA (h) is recommended for the inhibition of NFATc2IP 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

NFATc2IP (B-1): sc-377461 is recommended as a control antibody for monitoring of NFATc2IP 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 NFATc2IP gene expression knockdown using RT-PCR Primer: NFATc2IP (h)-PR: sc-93159-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

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.