SANTA CRUZ BIOTECHNOLOGY, INC.

NALP6 siRNA (h): sc-61147

BACKGROUND

The NACHT-, LRR- and PYD-containing protein (NALP) family function in the regulation of apoptosis and inflammatory signaling pathways. Members of the NALP family (also designated Pyrin-containing Apaf-1-like proteins) include NALP1 through NALP11. Most short NALPs, such as NALP6, have a C-terminal leucine-rich repeat (LRR) region, an N-terminal Pyrin (MEFV) domain (PYD), followed by a NACHT domain and a NACHT-associated domain (NAD). The predicted 892-amino acid NALP6 protein has an N-terminal PYD, a central NACHT-type nucleotide-binding site domain, and a C-terminal domain containing at least five LRR motifs. NALP6 is a putative mediator in the activation of CASP1 via ASC (PYD and CARD domain-containing protein) and promotes activation of NFκB. NALP6 binds to ASC with its DAPIN domain. Predominant expression of NALP6 is observed in granulocytes whereas lower levels of expression are detected in T-cells.

REFERENCES

1. Grenier, J.M., et al. 2002. Functional screening of five PYPAF family members identifies PYPAF5 as a novel regulator of NFκB and caspase-1. FEBS Lett. 530: 73-78.
2. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 606838. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
3. Albrecht, M., et al. 2003. Identification of mammalian orthologs associates PYPAF5 with distinct functional roles. FEBS Lett. 538: 173-177.
4. Drygin, D., et al. 2005. Induction of oligonucleotides in lung epithelial carcinoma cells. Oligonucleotides 15: 105-118.

CHROMOSOMAL LOCATION

Genetic locus: NLRP6 (human) mapping to 11p15.5.

PRODUCT

NALP6 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 NALP6 shRNA Plasmid (h): sc-61147-SH and NALP6 shRNA (h) Lentiviral Particles: sc-61147-V as alternate gene silencing products.

For independent verification of NALP6 (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-61147A, sc-61147B and sc-61147C.

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

NALP6 siRNA (h) is recommended for the inhibition of NALP6 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 NALP6 gene expression knockdown using RT-PCR Primer: NALP6 (h)-PR: sc-61147-PR (20 µl, 542 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Lin, Y. and Luo, Z. 2017. NLRP6 facilitates the interaction between TAB2/3 and TRIM38 in rheumatoid arthritis fibroblast-like synoviocytes. FEBS Lett. 591: 1141-1149.
2. Lu, W.L., et al. 2019. NLRP6 suppresses the inflammatory response of human periodontal ligament cells by inhibiting NFκB and ERK signal pathways. Int. Endod. J. 52: 999-1009.
3. Li, J., et al. 2020. Protective effects of *Clostridium butyricum* against oxidative stress induced by food processing and lipid-derived aldehydes in Caco-2 cells. Appl. Microbiol. Biotechnol. 104: 9343-9361.
4. Cai, S., et al. 2020. NLRP6 modulates neutrophil homeostasis in bacterial pneumonia-derived sepsis. Mucosal Immunol. E-published.

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.