SANTA CRUZ BIOTECHNOLOGY, INC.

NALP10 siRNA (h): sc-61140

BACKGROUND

The NACHT-, LRR- and PYD-containing protein (NALP) family functions in the regulation of apoptosis and inflammatory signaling pathways. Members of the NALP family (also designated Pyrin-containing APAF1-like proteins) include NALP1 through NALP11. Several family members, such as NALP1, NALP2, NALP3 and NALP6, influence NFκB and caspase pathways as components of the inflammasome. NALP10 is a member of the NALP family that lacks the LRR region but also may play a regulatory role in the innate immune system. NALP10 inhibits NFκB activation as well as apoptosis induced by ASC. It is highly expressed in brain, heart and skeletal muscle and is regulated by Annexin A7 in a mechanism that may be involved with tumorgenesis.

REFERENCES

1. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 609662. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
2. Chamaillard, M., et al. 2003. NODS, NALPS and NAIP: intracellular regulators of bacterial-induced inflammation. Cell. Microbiol. 5: 581-592.
3. Tschopp, J., et al. 2003. NALPs: a novel protein family involved in inflammation. Nat. Rev. Mol. Cell Biol. 4: 95-104.
4. Hiller, S., et al. 2003. NMR structure of the apoptosis- and inflammation-related NALP1 Pyrin domain. Structure 11: 1199-1205.
5. Damiano, J.S., et al. 2004. Heterotypic interactions among NACHT domains: implications for regulation of innate immune responses. Biochem. J. 381: 213-219.
6. Sanz, C., et al. 2004. NALP1 is a transcriptional target for cAMP-response-element-binding protein (CREB) in myeloid leukaemia cells. Biochem. J. 384: 281-286.
7. Liu, F., et al. 2004. Expression of NALP1 in cerebellar granule neurons stimulates apoptosis. Cell. Signal. 16: 1013-1021.
8. Kinoshita, T., et al. 2005. PYPAF3, a PYRIN-containing APAF-1-like protein, is a feedback regulator of caspase-1-dependent interleukin-1β secretion. J. Biol. Chem. 280: 21720-21725.

CHROMOSOMAL LOCATION

Genetic locus: NLRP10 (human) mapping to 11p15.4.

PRODUCT

NALP10 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 NALP10 shRNA Plasmid (h): sc-61140-SH and NALP10 shRNA (h) Lentiviral Particles: sc-61140-V as alternate gene silencing products.

For independent verification of NALP10 (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-61140A, sc-61140B and sc-61140C.

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

NALP10 siRNA (h) is recommended for the inhibition of NALP10 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 NALP10 gene expression knockdown using RT-PCR Primer: NALP10 (h)-PR: sc-61140-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. Kaur, G., et al. 2018. Cigarette smoke-induced inflammation: NLRP10-mediated mechanisms. Toxicology 398-399: 52-67.
2. Singh, D.P., et al. 2018. Membrane microdomains regulate NLRP10- and NLRP12-dependent signalling in A549 cells challenged with cigarette smoke extract. Arch. Toxicol. 92: 1767-1783.

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.