SANTA CRUZ BIOTECHNOLOGY, INC.

NALP7 siRNA (h): sc-61149

BACKGROUND

Most short NALPs, such as NALP7 (PYPAF3), 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). NALP7, which demonstrates expression in several tissues, including uterus and ovary, while showing low levels of expression in heart and brain tissues, inhibits CASP1/caspase-1-dependent IL-1β secretion through a direct interaction with CASP1 and IL-1β. Defects in the NALP7 gene are known to cause the formation of a hydatidiform mole (HYDM), an abnormal human pregnancy with no embryo and cystic degeneration of placental villi. Knockdown of the NALP7 gene via RNA interference reduces the growth of carcinoma cell lines, leading to the conclusion that NALP7 may play a crucial role in cell proliferation. The NALP7 gene maps to chromosome 19q13.42, within a cluster of many other NALP genes.

REFERENCES

1. Moglabey, Y.B., et al. 1999. Genetic mapping of a maternal locus responsible for familial hydatidiform moles. Hum. Mol. Genet. 8: 667-671.
2. Agarwal, P., et al. 2004. Familial recurrent molar pregnancy: a case report. Acta Obstet. Gynecol. Scand. 83: 213-214.
3. Okada, K., et al. 2004. Oncogenic role of NALP7 in testicular seminomas. Cancer Sci. 95: 949-954.
4. Drygin, D., et al. 2005. Induction of toll-like receptors and NALP/PAN/PYPAF family members by modified oligonucleotides in lung epithelial carcinoma cells. Oligonucleotides 15: 105-118.
5. 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.
6. Murdoch, S., et al. 2006. Mutations in NALP7 cause recurrent hydatidiform moles and reproductive wastage in humans. Nat. Genet. 38: 300-302.

CHROMOSOMAL LOCATION

Genetic locus: NLRP7 (human) mapping to 19q13.42.

PRODUCT

NALP7 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 NALP7 shRNA Plasmid (h): sc-61149-SH and NALP7 shRNA (h) Lentiviral Particles: sc-61149-V as alternate gene silencing products.

For independent verification of NALP7 (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-61149A, sc-61149B and sc-61149C.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

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

NALP7 siRNA (h) is recommended for the inhibition of NALP7 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

NALP7 (C-8): sc-377190 is recommended as a control antibody for monitoring of NALP7 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 NALP7 gene expression knockdown using RT-PCR Primer: NALP7 (h)-PR: sc-61149-PR (20 µl, 499 bp). 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.