SANTA CRUZ BIOTECHNOLOGY, INC.

N-WASP siRNA (h): sc-36006

BACKGROUND

The Wiskott-Aldrich syndrome (WAS) is characterized by thrombocytopenia, eczema, defects in cell-mediated and humoral immunity, and a propensity for lymphoproliferative diseases. The syndrome is the result of a mutation in the gene encoding a proline-rich protein termed WASP. WASP and the related protein neural-WASP (or N-WASP) are downstream effectors of Cdc42. Both WASP and N-WASP are implicated in Actin polymerization and cytoskeletal organization, and N-WASP is also essential for mediating the Cdc42-induced formation of filopodia. WASP is primarily expressed in hematopoietic cells, whereas N-WASP is richest in neural tissues and is also expressed ubiquitously. The effects of Cdc42-stimulated Actin assembly require the interaction of WASP/N-WASP with the Arp2/3 complex, which dramatically enhances polymerization. The WASP and N-WASP proteins characteristically contain a pleckstrin homology (PH) domain, which binds phosphatidyl-inositol bisphosphate (PIP2); a Cdc42-binding domain; and a 70 amino acid conserved verprolin-homology (VPH) domain, which is the Actin-binding region and is critical to the regulation of the Actin cytoskeleton.

REFERENCES

1. Remold-O'Donnell, E., et al. 1996. Defects in Wiskott-Aldrich syndrome blood cells. Blood 87: 2621-2631.
2. Stewart, D.M., et al. 1996. Studies of the expression of the Wiskott-Aldrich syndrome protein. J. Clin. Invest. 97: 2627-2634.

CHROMOSOMAL LOCATION

Genetic locus: WASL (human) mapping to 7q31.32.

PRODUCT

N-WASP siRNA (h) is a pool of 2 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 N-WASP shRNA Plasmid (h): sc-36006-SH and N-WASP shRNA (h) Lentiviral Particles: sc-36006-V as alternate gene silencing products.

For independent verification of N-WASP (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-36006A and sc-36006B.

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

N-WASP siRNA (h) is recommended for the inhibition of N-WASP 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.

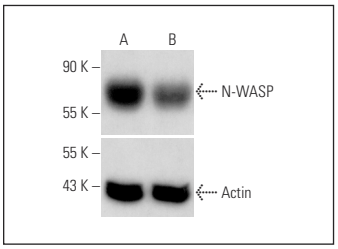
GENE EXPRESSION MONITORING

N-WASP (C-1): sc-271484 is recommended as a control antibody for monitoring of N-WASP 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 N-WASP gene expression knockdown using RT-PCR Primer: N-WASP (h)-PR: sc-36006-PR (20 µl, 435 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

DATA



N-WASP siRNA (h): sc-36006. Western blot analysis of N-WASP expression in non-transfected control (**A**) and N-WASP siRNA transfected (**B**) SK-N-SH cells. Blot probed with WASP (B-9): sc-13139. Actin (I-19): sc-1616 used as specificity and loading control.

SELECT PRODUCT CITATIONS

1. Bierne, H., et al. 2005. WASP-related proteins, Abi1 and Ena/VASP are required for *Listeria* invasion induced by the Met receptor. J. Cell Sci. 118: 1537-1547.
2. Shortrede, J.E., et al. 2016. Paxillin, a novel controller in the signaling of estrogen to FAK/N-WASP/Arp2/3 complex in breast cancer cells. Mol. Cell. Endocrinol. 430: 56-67.
3. Frugtniet, B.A., et al. 2017. Neural Wiskott-Aldrich syndrome protein (nWASP) is implicated in human lung cancer invasion. BMC Cancer 17: 224.

RESEARCH USE

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