SANTA CRUZ BIOTECHNOLOGY, INC.

WIP siRNA (h): sc-37183

BACKGROUND

Mutations in the Wiskott-Aldrich syndrome protein (WASP) often result in immunodeficiency due to abnormal T cell and B cell activation. The 503 amino acid WAS-interacting protein (WIP) contains a number of domains implicated in Actin-binding and several putative Src homology-binding domains. The first 100 amino acids of WASP interact with amino acids 377-503 of WIP, and the majority of pathogenic mutations associated with WAS occur within the first 100 amino acids of WASP. The gene encoding human WIP maps to chromosome 2p31.1. Overexpression of WIP in the human B cell line BJAB increases F-Actin content and cerebriform projections. While both WIP and Vav cooperate in the regulation of NF-AT/AP-1 gene transcription, the WIP-WASP complex is required for activation of NF-AT/AP-1 necessary for proper T cell function. A dysfunctional WIP-WASP complex may be implicated in the immunodeficient phenotype in WAS.

REFERENCES

1. Cooper, M.D., et al. 1968. Am. J. Med. 44: 499-513.
2. Derry, J.M., et al. 1994. Isolation of a novel gene mutated in Wiskott-Aldrich syndrome. Cell 78: 635-644.
3. Schwarz, K., et al. 1996. WASPbase: a database of WAS- and XLT-causing mutations. Immunol. Today 17: 496-502.
4. Ramesh, N., et al. 1997. WIP, a protein associated with Wiskott-Aldrich syndrome protein, induces Actin polymerization and redistribution in lymphoid cells. Proc. Natl. Acad. Sci. USA 94: 14671-14676.

CHROMOSOMAL LOCATION

Genetic locus: WIPF1 (human) mapping to 2q31.1.

PRODUCT

WIP 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 WIP shRNA Plasmid (h): sc-37183-SH and WIP shRNA (h) Lentiviral Particles: sc-37183-V as alternate gene silencing products.

For independent verification of WIP (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-37183A, sc-37183B and sc-37183C.

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

WIP siRNA (h) is recommended for the inhibition of WIP expression in human cells.

GENE EXPRESSION MONITORING

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

WIP (C-1): sc-390099 is recommended as a control antibody for monitoring of WIP 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 WIP gene expression knockdown using RT-PCR Primer: WIP (h)-PR: sc-37183-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. Geng, H., et al. 2020. Long noncoding RNA SNHG6 functions as an oncogene in non-small cell lung cancer via modulating ETS1 signaling. Onco Targets Ther. 13: 921-930.

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.