SANTA CRUZ BIOTECHNOLOGY, INC.

WHIP siRNA (h): sc-63222

BACKGROUND

Werner's syndrome is an inherited, autosomal recessive disorder that is characterized by premature aging and commonly results in cancer. WHIP, also known as WRNIP1 (Werner helicase-interacting protein 1) is a ubiquitously expressed member of the AAA ATPase family that is involved in the regulation of DNA synthesis. Localized to the nucleus, WHIP acts as a modulator for initiation events during DNA polymerase-mediated DNA synthesis and, through its ATPase activity, can detect DNA damage or arrested replication forks. WHIP is found in granular structures within the nucleus, where it interacts with the N-terminal domain of WRN, the protein product of the gene responsible for Werner's syndrome. Due to its close association with WRN, WHIP is thought to be involved in the aging process and thus may play a role in the development of Werner's syndrome. Four isoforms of WHIP are produced due to alternative splicing events.

REFERENCES

1. Branzei, D., et al. 2001. A novel protein interacts with the Werner's syndrome gene product physically and functionally. J. Biol. Chem. 276: 20364-20369.
2. Shen, J., et al. 2001. Unwinding the molecular basis of the Werner syndrome. Mech. Ageing Dev. 122: 921-944.
3. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 608196. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
4. Comai, L., et al. 2004. The Werner syndrome protein at the crossroads of DNA repair and apoptosis. Mech. Ageing Dev. 125: 521-528.
5. Tsurimoto, T., et al. 2005. Human Werner helicase interacting protein 1 (WRNIP1) functions as a novel modulator for DNA polymerase δ. Genes Cells 10: 13-22.
6. Kawabe, Y., et al. 2006. Analyses of the interaction of WRNIP1 with Werner syndrome protein (WRN) *in vitro* and in the cell. DNA Repair 5: 816-828.

CHROMOSOMAL LOCATION

Genetic locus: WRNIP1 (human) mapping to 6p25.2.

PRODUCT

WHIP 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 WHIP shRNA Plasmid (h): sc-63222-SH and WHIP shRNA (h) Lentiviral Particles: sc-63222-V as alternate gene silencing products.

For independent verification of WHIP (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-63222A, sc-63222B and sc-63222C.

RESEARCH USE

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

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

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

WHIP (G-2): sc-377402 is recommended as a control antibody for monitoring of WHIP 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 WHIP gene expression knockdown using RT-PCR Primer: WHIP (h)-PR: sc-63222-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

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