

# WHIP (A-7): sc-271637

## 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

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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  $\delta$ . *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.
7. Yoshimura, A., et al. 2006. Functional relationships between Rad18 and WRNIP1 in vertebrate cells. *Biol. Pharm. Bull.* 29: 2192-2196.
8. Bish, R.A., et al. 2007. Werner helicase-interacting protein 1 binds polyubiquitin via its zinc finger domain. *J. Biol. Chem.* 282: 23184-23193.

## CHROMOSOMAL LOCATION

Genetic locus: WRNIP1 (human) mapping to 6p25.2; Wrnip1 (mouse) mapping to 13 A3.2.

## SOURCE

WHIP (A-7) is a mouse monoclonal antibody raised against amino acids 366-665 mapping at the C-terminus of WHIP of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG $\gamma_1$  kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

WHIP (A-7) is recommended for detection of WHIP of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for WHIP siRNA (h): sc-63222, WHIP siRNA (m): sc-63223, WHIP shRNA Plasmid (h): sc-63222-SH, WHIP shRNA Plasmid (m): sc-63223-SH, WHIP shRNA (h) Lentiviral Particles: sc-63222-V and WHIP shRNA (m) Lentiviral Particles: sc-63223-V.

Molecular Weight of WHIP: 72 kDa.

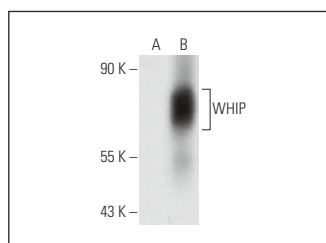
Positive Controls: WHIP (m): 293T Lysate: sc-124643, Jurkat nuclear extract: sc-2132 or IMR-32 nuclear extract: sc-2148.

## RECOMMENDED SUPPORT REAGENTS

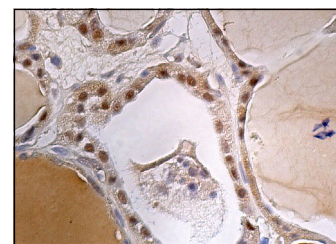
To ensure optimal results, the following support reagents are recommended:

- 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).
- 3) Immunofluorescence: use m-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.
- 4) Immunohistochemistry: use m-IgG $\kappa$  BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

## DATA



WHIP (A-7): sc-271637. Western blot analysis of WHIP expression in non-transfected: sc-117752 (A) and mouse WHIP transfected: sc-124643 (B) 293T whole cell lysates.



WHIP (A-7): sc-271637. Immunoperoxidase staining of formalin fixed, paraffin-embedded human thyroid gland tissue showing nuclear staining of glandular cells.

## STORAGE

Store at 4° C, \*\*DO NOT FREEZE\*\*. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## RESEARCH USE

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