

# RNase H1 (H-9): sc-365267

## BACKGROUND

The human RNase H1 enzyme is a cytoplasmic endonuclease that degrades the RNA of RNA-DNA hybrids resulting in 5'-phosphomonoester products. Mn<sup>2+</sup> and N-ethylmaleimide can inhibit Mg<sup>2+</sup>-dependent RNase H1 activity. The RNase H1 gene is present at similar levels in all human cells and tissues, indicating that RNase H1 may be a housekeeping protein. The human RNase H1 gene maps to chromosome 2p25.3 with pseudogenes present on chromosome 17p11.2 and chromosome 1q.

## REFERENCES

1. Wu, H., et al. 1998. Molecular cloning and expression of cDNA for human RNase H. *Antisense Nucleic Acid Drug Dev.* 8: 53-61.
2. Cerritelli, S. and Crouch, R. 1998. Cloning, expression, and mapping of ribonucleases H of human and mouse related to bacterial RNase H1. *Genomics* 53: 300-307.
3. ten Asbroek, A., et al. 2002. Ribonuclease H1 maps to chromosome 2 and has at least three pseudogene loci in the human genome. *Genomics* 79: 818-823.
4. Lima, W.F., et al. 2003. Human RNase H1 activity is regulated by a unique redox switch formed between adjacent cysteines. *J. Biol. Chem.* 278: 14906-14912.
5. Lima, W.F., et al. 2003. Human RNase H1 uses one tryptophan and two lysines to position the enzyme at the 3'-DNA/5'-RNA terminus of the heteroduplex substrate. *J. Biol. Chem.* 278: 49860-49867.
6. Wu, H., et al. 2004. Determination of the role of the human RNase H1 in the pharmacology of DNA-like antisense drugs. *J. Biol. Chem.* 279: 17181-17189.
7. Lima, W.F., et al. 2004. Structural requirements at the catalytic site of the heteroduplex substrate for human RNase H1 catalysis. *J. Biol. Chem.* 279: 36317-36326.
8. SWISS-PROT/TrEMBL (O60930). World Wide Web URL: <http://www.expasy.ch/sprot/sprot-top.html>

## CHROMOSOMAL LOCATION

Genetic locus: RNASEH1 (human) mapping to 2p25.3; Rnaseh1 (mouse) mapping to 12 A2.

## SOURCE

RNase H1 (H-9) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 253-278 at the C-terminus of RNase H1 of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>3</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-365267 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

## APPLICATIONS

RNase H1 (H-9) is recommended for detection of RNase H1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (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 RNase H1 siRNA (h): sc-106515, RNase H1 siRNA (m): sc-152994, RNase H1 shRNA Plasmid (h): sc-106515-SH, RNase H1 shRNA Plasmid (m): sc-152994-SH, RNase H1 shRNA (h) Lentiviral Particles: sc-106515-V and RNase H1 shRNA (m) Lentiviral Particles: sc-152994-V.

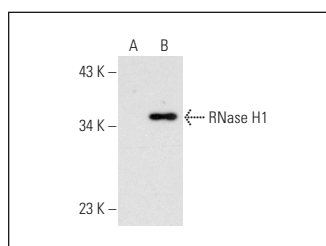
Molecular Weight of RNase H1: 32-35 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, RNase H1 (m): 293T Lysate: sc-123223 or Caki-1 cell lysate: sc-2224.

## RECOMMENDED SUPPORT REAGENTS

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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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.

## DATA



RNase H1 (H-9): sc-365267. Western blot analysis of RNase H1 expression in non-transfected: sc-117752 (A) and mouse RNase H1 transfected: sc-123223 (B) 293T whole cell lysates.

## 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.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.