SANTA CRUZ BIOTECHNOLOGY, INC.

RNase H1 (C-8): sc-365057

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The human RNase H1 enzyme is a cytoplasmic endonuclease that degrades the RNA of RNA-DNA hybrids resulting in 5'-phosphomonoester products. Mn^{2+} and N-ethylmaleimide can inhibit Mg^{2+}-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.

CHROMOSOMAL LOCATION

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

SOURCE

RNase H1 (C-8) 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_1 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-365057 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

STORAGE

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

APPLICATIONS

RNase H1 (C-8) 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.

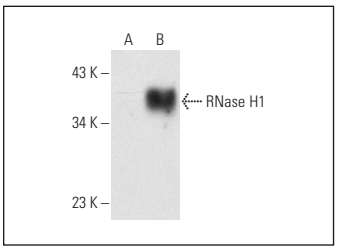
Molecular Weight of RNase H1: 32-35 kDa.

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

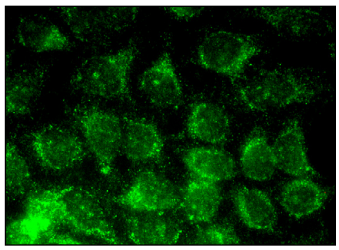
RECOMMENDED SUPPORT REAGENTS

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 (C-8): sc-365057. 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.



RNase H1 (C-8): sc-365057. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Wiedemann, E.M., et al. 2016. DNA replication origins in immunoglobulin switch regions regulate class switch recombination in an R-loop-dependent manner. Cell Rep. 17: 2927-2942.

RESEARCH USE

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