SANTA CRUZ BIOTECHNOLOGY, INC.

RNase H1 (H-4): sc-376326

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., et al. 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.

CHROMOSOMAL LOCATION

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

SOURCE

RNase H1 (H-4) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 241-275 near 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.

RNase H1 (H-4) is available conjugated to agarose (sc-376326 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-376326 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-376326 PE), fluorescein (sc-376326 FITC), Alexa Fluor® 488 (sc-376326 AF488), Alexa Fluor® 546 (sc-376326 AF546), Alexa Fluor® 594 (sc-376326 AF594) or Alexa Fluor® 647 (sc-376326 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-376326 AF680) or Alexa Fluor® 790 (sc-376326 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-376326 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

RNase H1 (H-4) 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).

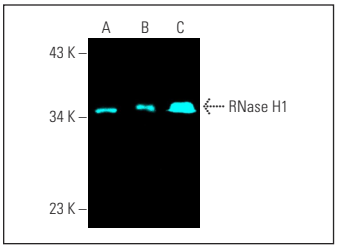
RNase H1 (H-4) is also recommended for detection of RNase H1 in additional species, including canine.

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.

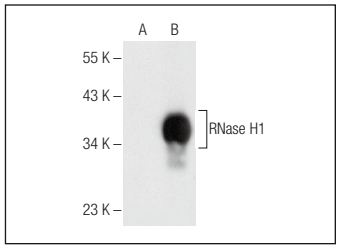
Molecular Weight of RNase H1: 32-35 kDa.

Positive Controls: PC-12 cell lysate: sc-2250, RNase H1 (m): 293T Lysate: sc-123223 or RAW 264.7 whole cell lysate: sc-2211.

DATA



RNase H1 (H-4) Alexa Fluor® 647: sc-376326 AF647. Direct fluorescent western blot analysis of RNase H1 expression in PC-12 (**A**), NIH/3T3 (**B**) and RAW 264.7 (**C**) whole cell lysates. Blocked with UltraCruz® Blocking Reagent: sc-516214.



RNase H1 (H-4): sc-376326. 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.

SELECT PRODUCT CITATIONS

1. Fagan-Solis, K.D., et al. 2020. A p53-independent DNA damage response suppresses oncogenic proliferation and genome instability. Cell Rep. 30: 1385-1399.e7.
2. Fletcher, C.E., et al. 2022. A non-coding RNA balancing act: miR-346-induced DNA damage is limited by the long non-coding RNA NORAD in prostate cancer. Mol. Cancer 21: 82.
3. Laspata, N., et al. 2023. PARP1 associates with R-loops to promote their resolution and genome stability. Nucleic Acids Res. 51: 2215-2237.

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.