SANTA CRUZ BIOTECHNOLOGY, INC.

RNase H1 (S-34): sc-101114

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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.
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 (S-34) is a mouse monoclonal antibody raised against recombinant RNase H1 of human origin.

PRODUCT

Each vial contains 100 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

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 (S-34) is recommended for detection of RNase H1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] 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.

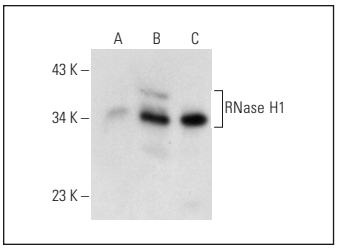
Molecular Weight of RNase H1: 32-35 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, ES-2 cell lysate: sc-24674 or RNase H1 (h): 293T Lysate: sc-171572.

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, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

DATA



RNase H1 (S-34): sc-101114. Western blot analysis of RNase H1 expression in non-transfected 293T: sc-117752 (**A**), human RNase H1 transfected 293T: sc-171572 (**B**) and HeLa (**C**) whole cell lysates.

RESEARCH USE

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

PROTOCOLS

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