

RNase H1 (h): 293T Lysate: sc-171572

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., Lima, W. and Crooke, S. 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., van Groenigen, M., Jakobs, M., Koevoets, C., Janssen, B. and Baas, F. 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., Wu, H., Nichols, J.G., Manalili, S.M., Drader, J.J., Hofstadler, S.A. and Crooke, S.T. 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., Wu, H., Nichols, J.G., Prakash, T.P., Ravikumar, V. and Crooke, S.T. 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., Lima, W.F., Zhang, H., Fan, A., Sun, H. and Crooke, S.T. 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., Nichols, J.G., Wu, H., Prakash, T.P., Migawa, M.T., Wyrzykiewicz, T.K., Bhat, B. and Crooke, S.T. 2004. Structural requirements at the catalytic site of the heteroduplex substrate for human RNase H1 catalysis. *J. Biol. Chem.* 279: 36317-36326.

CHROMOSOMAL LOCATION

Genetic locus: RNASEH1 (human) mapping to 2p25.3.

PRODUCT

RNase H1 (h): 293T Lysate represents a lysate of human RNase H1 transfected 293T cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

PROTOCOLS

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

APPLICATIONS

RNase H1 (h): 293T Lysate is suitable as a Western Blotting positive control for human reactive RNase H1 antibodies. Recommended use: 10-20 µl per lane.

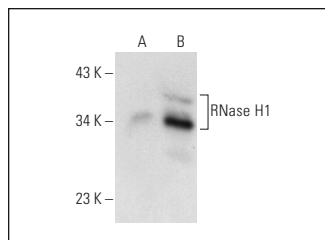
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

RNase H1 (S-34): sc-101114 is recommended as a positive control antibody for Western Blot analysis of enhanced human RNase H1 expression in RNase H1 transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

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.

DATA



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

RESEARCH USE

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