SANTA CRUZ BIOTECHNOLOGY, INC.

RNase HII-A (S-14LJ-17): sc-101112

BACKGROUND

The RNase HII complex is an endonuclease that degrades RNA found in RNA:DNA duplexes and is composed of one catalytic subunit and two non-catalytic subunits. RNase HII-A, also called RNASEH2A (ribonuclease H2 subunit A), RNASEHI, AGS4 or RNHIA, is the 299 amino acid catalytic subunit of RNase HII. Localized to the nucleus, RNase HII-A mediates the removal of Okazaki fragment RNA primers that are present on the lagging strand during DNA replication. RNase HII-A catalyzes the endonucleolytic cleavage of RNA to a 5'-phosphomonoester and is able to bind magnesium or manganese as cofactors. Defects in the gene encoding RNase HII-A are the cause of Aicardi-Goutieres syndrome type 4 (AGS4), an autosomal recessive encephalopathy characterized by cerebral atrophy, leukodystrophy, intracranial calcifications and chronic cerebrospinal fluid (CSF) lymphocytosis. Patients affected by AGS4 have severe neurological dysfunctions and often die in early childhood.

REFERENCES

1. Frank, P., et al. 1998. Cloning of the cDNA encoding the large subunit of human RNase HI, a homologue of the prokaryotic RNase HII. Proc. Natl. Acad. Sci. USA 95: 12872-12877.
2. ten Asbroek, A.L., et al. 2002. The involvement of human ribonucleases H1 and H2 in the variation of response of cells to antisense phosphorothioate oligonucleotides. Eur. J. Biochem. 269: 583-592.
3. Jeong, H.S., et al. 2004. RNase H2 of *Saccharomyces cerevisiae* is a complex of three proteins. Nucleic Acids Res. 32: 407-414.
4. Bayliss, C.D., et al. 2005. Destabilization of tetranucleotide repeats in *Haemophilus influenzae* mutants lacking RnaseHI or the Klenow domain of PolI. Nucleic Acids Res. 33: 400-408.
5. Crow, Y.J., et al. 2006. Mutations in genes encoding ribonuclease H2 subunits cause Aicardi-Goutieres syndrome and mimic congenital viral brain infection. Nat. Genet. 38: 910-916.
6. Rice, G., et al. 2007. Clinical and molecular phenotype of Aicardi-Goutieres syndrome. Am. J. Hum. Genet. 81: 713-725.
7. Online Mendelian Inheritance in Man, OMIM™. 2007. Johns Hopkins University, Baltimore, MD. MIM Number: 606034. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/

CHROMOSOMAL LOCATION

Genetic locus: RNASEH2A (human) mapping to 19p13.2.

SOURCE

RNase HII-A (S-14LJ-17) is a mouse monoclonal antibody raised against recombinant RNase HII-A of human origin.

PRODUCT

Each vial contains 100 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

RESEARCH USE

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

APPLICATIONS

RNase HII-A (S-14LJ-17) is recommended for detection of RNase HII-A of 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 HII-A siRNA (h): sc-62954, RNase HII-A shRNA Plasmid (h): sc-62954-SH and RNase HII-A shRNA (h) Lentiviral Particles: sc-62954-V.

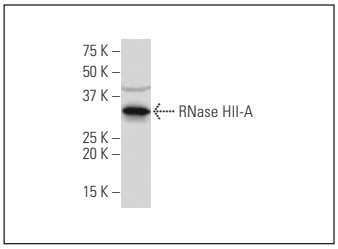
Molecular Weight of RNase HII-A: 33 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204.

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).

DATA



RNase HII-A (S-14LJ-17): sc-101112. Western blot analysis of RNase HII-A expression in Jurkat whole cell lysate.

STORAGE

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

PROTOCOLS

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