

RNase HII-A (T-20): sc-68134

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. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 606034. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
4. Jeong, H.S., et al. 2004. RNase H2 of *Saccharomyces cerevisiae* is a complex of three proteins. Nucleic Acids Res. 32: 407-414.
5. 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.
6. Crow, Y.J., et al. 2006. Mutations in genes encoding ribonuclease H2 subunits cause Aicardi-Goutières syndrome and mimic congenital viral brain infection. Nat. Genet. 38: 910-916.
7. Rice, G., et al. 2007. Clinical and molecular phenotype of Aicardi-Goutieres syndrome. Am. J. Hum. Genet. 81: 713-725.

CHROMOSOMAL LOCATION

Genetic locus: RNASEH2A (human) mapping to 19p13.2; Rnaseh2a (mouse) mapping to 8 C3.

SOURCE

RNase HII-A (T-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of RNase HII-A of human origin.

STORAGE

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

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-68134 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

Available as TransCruz reagent for Gel Supershift and ChIP applications, sc-68134 X, 200 µg/0.1 ml.

APPLICATIONS

RNase HII-A (T-20) is recommended for detection of RNase HII-A of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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 HII-A (T-20) is also recommended for detection of RNase HII-A in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for RNase HII-A siRNA (h): sc-62954, RNase HII-A siRNA (m): sc-62955, RNase HII-A shRNA Plasmid (h): sc-62954-SH, RNase HII-A shRNA Plasmid (m): sc-62955-SH, RNase HII-A shRNA (h) Lentiviral Particles: sc-62954-V and RNase HII-A shRNA (m) Lentiviral Particles: sc-62955-V.

RNase HII-A (T-20) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight of RNase HII-A: 33 kDa.

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

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotting A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

RESEARCH USE

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

PROTOCOLS

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