

# RNase HII-A (G-10): sc-515475

## 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.

## CHROMOSOMAL LOCATION

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

## SOURCE

RNase HII-A (G-10) is a mouse monoclonal antibody raised against amino acids 1-299 representing full length RNase HII-A of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

RNase HII-A (G-10) is available conjugated to agarose (sc-515475 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-515475 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-515475 PE), fluorescein (sc-515475 FITC), Alexa Fluor® 488 (sc-515475 AF488), Alexa Fluor® 546 (sc-515475 AF546), Alexa Fluor® 594 (sc-515475 AF594) or Alexa Fluor® 647 (sc-515475 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-515475 AF680) or Alexa Fluor® 790 (sc-515475 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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## APPLICATIONS

RNase HII-A (G-10) is recommended for detection of RNase HII-A of 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).

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.

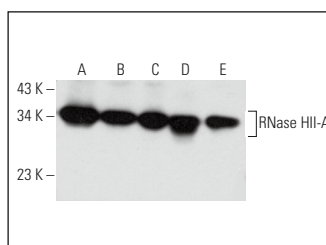
Molecular Weight of RNase HII-A: 33 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204, U-251-MG whole cell lysate: sc-364176 or HeLa nuclear extract: sc-2120.

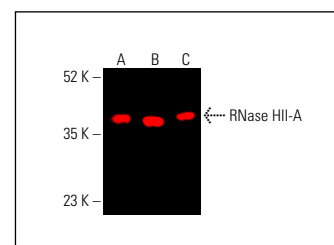
## RECOMMENDED SUPPORT REAGENTS

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). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

## DATA



RNase HII-A (G-10): sc-515475. Western blot analysis of RNase HII-A expression in Jurkat (A), U-251-MG (B), COLO 320HSR (C) and MES-SA/Dx5 (D) whole cell lysates and HeLa nuclear extract (E).



RNase HII-A (G-10): sc-515475. Near-Infrared western blot analysis of RNase HII-A expression in K-562 (A), THP-1 (B) and Hep G2 (C) whole cell lysates. Blocked with UltraCruz® Blocking Reagent: sc-516214. Detection reagent used: m-IgG<sub>1</sub> BP-CFL 790: sc-533666.

## SELECT PRODUCT CITATIONS

- Zimmermann, M., et al. 2018. CRISPR screens identify genomic ribonucleotides as a source of PARP-trapping lesions. *Nature* 559: 285-289.
- Benitez-Guijarro, M., et al. 2018. RNase H2, mutated in Aicardi-Goutières syndrome, promotes LINE-1 retrotransposition. *EMBO J.* 37: e98506.
- Madan, E., et al. 2019. HIF-transcribed p53 chaperones HIF-1α. *Nucleic Acids Res.* 47: 10212-10234.
- Reijns, M.A.M., et al. 2022. Signatures of TOP1 transcription-associated mutagenesis in cancer and germline. *Nature* 602: 623-631.
- Zimmermann, M., et al. 2022. Guiding ATR and PARP inhibitor combinations with chemogenomic screens. *Cell Rep.* 40: 111081.
- Sharma, A.B., et al. 2023. C16orf72/HAPSTR1/TAPR1 functions with BRCA1/Senataxin to modulate replication-associated R-loops and confer resistance to PARP disruption. *Nat. Commun.* 14: 5003.
- Conti, B.A., et al. 2024. RTF2 controls replication repriming and ribonucleotide excision at the replisome. *Nat. Commun.* 15: 1943.

## 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.