

# RNase HII-C (C-15): sc-68227

## 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-C, also called RNASEH2C (ribonuclease H2 subunit C), RNASEHI, AGS3 or AYP1, is the 164 amino acid non-catalytic subunit of RNase HII. Localized to the nucleus, RNase HII-C mediates the removal of Okazaki fragment RNA primers that are present on the lagging strand during DNA replication. RNase HII-C specifically degrades the RNA of RNA:DNA hybrids and mediates the excision of single ribonucleotides from DNA:RNA duplexes. Defects in the gene encoding RNase HII-C are the cause of Aicardi-Goutieres syndrome type 3 (AGS3), an autosomal recessive encephalopathy characterized by cerebral atrophy, leukodystrophy, intracranial calcifications and chronic cerebrospinal fluid (CSF) lymphocytosis. Patients affected by AGS3 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<sup>™</sup>. 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 Poll. *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: RNASEH2C (human) mapping to 11q13.1; Rnaseh2c (mouse) mapping to 19 A.

## SOURCE

RNase HII-C (C-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of RNase HI-C 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-68227 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-68227 X, 200 µg/0.1 ml.

## APPLICATIONS

RNase HII-C (C-15) is recommended for detection of ribonuclease h2 subunit c of mouse 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-C (C-15) is also recommended for detection of ribonuclease h2 subunit c in additional species, including equine, canine and porcine.

Suitable for use as control antibody for RNase HII-C siRNA (h): sc-62956, RNase HII-C siRNA (m): sc-62957, RNase HII-C shRNA Plasmid (h): sc-62956-SH, RNase HII-C shRNA Plasmid (m): sc-62957-SH, RNase HII-C shRNA (h) Lentiviral Particles: sc-62956-V and RNase HII-C shRNA (m) Lentiviral Particles: sc-62957-V.

RNase HII-C (C-15) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight of RNase HII-C: 18 kDa.

## 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<sup>™</sup> compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker<sup>™</sup> Molecular Weight Standards: sc-2035, TBS Blotto 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<sup>™</sup> 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](http://www.scbt.com) or our catalog for detailed protocols and support products.