

RNase Z1 (E-5): sc-390029

BACKGROUND

RNase Z1 (ribonuclease Z 1), also known as ELAC1 or D29, is a 363 amino acid nuclear protein that belongs to the RNase Z family of RNA-processing enzymes. Expressed throughout the body with highest expression in lung, brain, placenta, heart, liver, kidney and pancreas, RNase Z1 is a zinc phosphodiesterase that plays a role in tRNA maturation by removing 3'-trailer segments from precursor tRNA. In addition, RNase Z has a variety of other zinc-dependent RNA processing activities, including generation of 3' termini on tRNA, endonucleolytic cleavage of RNA and removal of extra 3' nucleotides from unprocessed tRNA. Defects in the gene encoding RNase Z1 may be involved in the pathogenesis of prostate cancer, suggesting a possible role for RNase Z1 in carcinogenesis.

REFERENCES

1. Yanaihara, N., et al. 2001. Physical and transcriptional map of a 311-kb segment of chromosome 18q21, a candidate lung tumor suppressor locus. *Genomics* 72: 169-179.
2. Tavtigian, S.V., et al. 2001. A candidate prostate cancer susceptibility gene at chromosome 17p. *Nat. Genet.* 27: 172-180.
3. Schiffer, S., et al. 2002. Assigning a function to a conserved group of proteins: the tRNA 3'-processing enzymes. *EMBO J.* 21: 2769-2777.
4. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 608079. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>

CHROMOSOMAL LOCATION

Genetic locus: ELAC1 (human) mapping to 18q21.2; Elac1 (mouse) mapping to 18 E2.

SOURCE

RNase Z1 (E-5) is a mouse monoclonal antibody raised against amino acids 161-270 mapping within an internal region of RNase Z1 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin. Also available as TransCruz reagent for Gel Supershift and ChIP applications, sc-390029 X, 200 µg/0.1 ml.

RNase Z1 (E-5) is available conjugated to agarose (sc-390029 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-390029 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-390029 PE), fluorescein (sc-390029 FITC), Alexa Fluor® 488 (sc-390029 AF488), Alexa Fluor® 546 (sc-390029 AF546), Alexa Fluor® 594 (sc-390029 AF594) or Alexa Fluor® 647 (sc-390029 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-390029 AF680) or Alexa Fluor® 790 (sc-390029 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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RESEARCH USE

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

APPLICATIONS

RNase Z1 (E-5) is recommended for detection of RNase Z1 of mouse, rat and 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)], 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 Z1 siRNA (h): sc-76411, RNase Z1 siRNA (m): sc-144626, RNase Z1 shRNA Plasmid (h): sc-76411-SH, RNase Z1 shRNA Plasmid (m): sc-144626-SH, RNase Z1 shRNA (h) Lentiviral Particles: sc-76411-V and RNase Z1 shRNA (m) Lentiviral Particles: sc-144626-V.

RNase Z1 (E-5) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

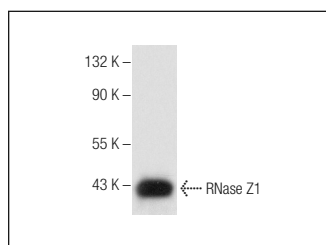
Molecular Weight of RNase Z1: 40 kDa.

Positive Controls: PC-12 cell lysate: sc-2250 or K-562 whole cell lysate: sc-2203.

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 Z1 (E-5): sc-390029. Western blot analysis of RNase Z1 expression in K-562 whole cell lysate.

SELECT PRODUCT CITATIONS

1. Yip, M.C.J., et al. 2020. ELAC1 repairs tRNAs cleaved during ribosome-associated quality control. *Cell Rep.* 30: 2106-2114.

STORAGE

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