SANTA CRUZ BIOTECHNOLOGY, INC.

TREX-1 (E-6): sc-271870

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

TREX-1 (three prime repair exonuclease-1), also known as trophoblast expressed 1, CRV, AGS1, AGS5, DRN3, HERNS or DNase III, is a member of the exonuclease superfamily and belongs to the TREX family. Members of the TREX family are involved in DNA metabolism and repair. TREX-1 is expressed in spleen, liver, thymus, colon, heart, brain and small intestine. It localizes to the nucleus and exists as a homodimer. TREX-1 is an exonuclease and its activity requires magnesium as a cofactor. TREX-1 has a preference for double stranded DNA and functions in the 3'-5' direction yielding nucleoside 5'-phosphates. TREX-1 also interacts with the SET complex (an endoplasmic reticulum (ER)-associated complex) and participates in granzyme A-mediated apoptosis. Mutations or defects in the gene encoding TREX-1 have been associated with a variety of diseases, including systemic lupus erythematosus, chilblain lupus (CHBL), Aicardi-Goutieres syndrome type 1 (AGS1) and type 5 (AGS5) and autosomal dominant retinal vasculopathy with cerebral leukodystrophy (CRV).

REFERENCES

1. Masuda, S., et al. 2005. Recruitment of the human TREX complex to mRNA during splicing. Genes Dev. 19: 1512-1517.
2. Crow, Y.J., et al. 2006. Mutations in the gene encoding the 3'-5' DNA exonuclease TREX-1 cause Aicardi-Goutieres syndrome at the AGS1 locus. Nat. Genet. 38: 917-920.
3. Wang, J.Y., et al. 2006. Mismatch repair proteins as sensors of alkylation DNA damage. Cancer Cell 9: 417-418.

CHROMOSOMAL LOCATION

Genetic locus: TREX1 (human) mapping to 3p21.31.

SOURCE

TREX-1 (E-6) is a mouse monoclonal antibody raised against amino acids 290-369 mapping at the C-terminus of TREX-1 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-271870 X, 200 µg/0.1 ml.

TREX-1 (E-6) is available conjugated to agarose (sc-271870 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-271870 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-271870 PE), fluorescein (sc-271870 FITC), Alexa Fluor® 488 (sc-271870 AF488), Alexa Fluor® 546 (sc-271870 AF546), Alexa Fluor® 594 (sc-271870 AF594) or Alexa Fluor®647 (sc-271870 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-271870 AF680) or Alexa Fluor® 790 (sc-271870 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

STORAGE

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

APPLICATIONS

TREX-1 (E-6) is recommended for detection of three prime repair exonuclease 1 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).

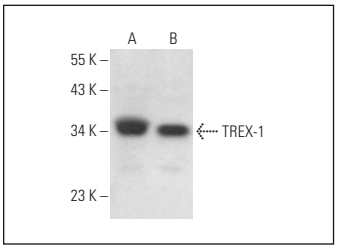
Suitable for use as control antibody for TREX-1 siRNA (h): sc-63157, TREX-1 shRNA Plasmid (h): sc-63157-SH and TREX-1 shRNA (h) Lentiviral Particles: sc-63157-V.

TREX-1 (E-6) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

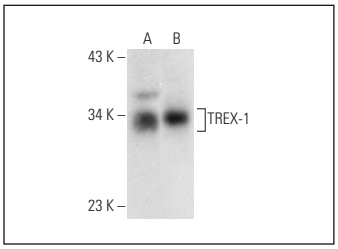
Molecular Weight of TREX-1: 33 kDa.

Positive Controls: HCT-8 cell lysate: sc-24675, HeLa whole cell lysate: sc-2200 or MIA PaCa-2 cell lysate: sc-2285.

DATA



TREX-1 (E-6): sc-271870. Western blot analysis of TREX-1 expression in HeLa (**A**) and Y79 (**B**) whole cell lysates.



TREX-1 (E-6): sc-271870. Western blot analysis of TREX-1 expression in HCT-8 (**A**) and MIA PaCa-2 (**B**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Yuan, F., et al. 2015. Human DNA exonuclease TREX1 is also an exoribonuclease that acts on single-stranded RNA. J. Biol. Chem. 290: 13344-13353.
2. Hasan, M., et al. 2015. Cytosolic nuclease TREX1 regulates oligosaccharyltransferase activity independent of nuclease activity to suppress immune activation. Immunity 43: 463-474.
3. Kucej, M., et al. 2017. Mitotic phosphorylation of TREX1 C terminus disrupts TREX1 regulation of the oligosaccharyltransferase complex. Cell Rep. 18: 2600-2607.
4. Luecke, S., et al. 2017. cGAS is activated by DNA in a length-dependent manner. EMBO Rep. 18: 1707-1715.
5. Kim, E.T., et al. 2019. SAMHD1 modulates early steps during human cytomegalovirus infection by limiting NF-κB activation. Cell Rep. 28: 434-448.
6. Dai, J., et al. 2019. Acetylation blocks cGAS activity and inhibits self-DNA-induced autoimmunity. Cell 176: 1447-1460.

RESEARCH USE

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