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Anti-TREX1 Picoband Antibody

Catalog # ABO12434

Product Information

Application	WB
Primary Accession	Q9NSU2
Host	Rabbit
Reactivity	Human
Clonality	Polyclonal
Format	Lyophilized
Description	Rabbit IgG polyclonal antibody for Three-prime repair exonuclease 1(TREX1) detection. Tested with WB in Human.
Reconstitution	Add 0.2ml of distilled water will yield a concentration of 500ug/ml.

Additional Information

Gene ID	11277
Other Names	Three-prime repair exonuclease 1, 3.1.11.2, 3'-5' exonuclease TREX1, DNase III, TREX1
Calculated MW	33212
Application Details	Western blot, 0.1-0.5 □g/ml, Human
Subcellular Localization	Nucleus. Cytoplasm, cytosol. Endoplasmic reticulum membrane; Peripheral membrane protein. Retained in the cytoplasm through the C-terminal region (By similarity). In response to DNA damage, translocates to the nucleus where it is specifically recruited to replication foci. Translocation to the nucleus also occurs during GZMA-mediated cell death. .
Tissue Specificity	Detected in thymus, spleen, liver, brain, heart, small intestine and colon. .
Source	Eukaryota
Protein Name	Three-prime repair exonuclease 1
Contents	Each vial contains 5mg BSA, 0.9mg NaCl, 0.2mg Na2HPO4, 0.05mg NaN3.
Immunogen	A synthetic peptide corresponding to a sequence in the middle region of human TREX1 (156-185aa DDNLANLLLAFLRRQPQPWCLVAHNGDRYD), different from the related mouse sequence by four amino acids.
Purification	Immunogen affinity purified.
Cross Reactivity	No cross reactivity with other proteins.

Storage	At -20˚C for one year. After r˚Constitution, at 4˚C for one month. It˚Can also be aliquotted and stored frozen at -20˚C for a longer time.Avoid repeated freezing and thawing.

Protein Information

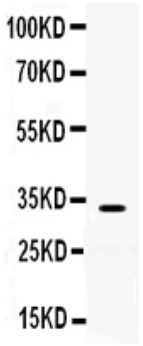
Name	TREX1 {ECO:0000303|PubMed:10391904, ECO:0000312|HGNC:HGNC:12269}
Function	Major cellular 3'-to-5' DNA exonuclease which digests single- stranded DNA (ssDNA) and double-stranded DNA (dsDNA) with mismatched 3' termini (PubMed:10391904, PubMed:10393201, PubMed:17293595). Prevents cell-intrinsic initiation of autoimmunity (PubMed:10391904, PubMed:10393201, PubMed:17293595). Acts by metabolizing DNA fragments from endogenous retroelements, including L1, LTR and SINE elements (PubMed:10391904, PubMed:10393201, PubMed:17293595). Plays a key role in degradation of DNA fragments at cytosolic micronuclei arising from genome instability: its association with the endoplasmic reticulum membrane directs TREX1 to ruptured micronuclei, leading to micronuclear DNA degradation (PubMed:33476576). Micronuclear DNA degradation is required to limit CGAS activation and subsequent inflammation (PubMed:33476576). Unless degraded, these DNA fragments accumulate in the cytosol and activate the cGAS-STING innate immune signaling, leading to the production of type I interferon (PubMed:33476576). Prevents chronic ATM-dependent checkpoint activation, by processing ssDNA polynucleotide species arising from the processing of aberrant DNA replication intermediates (PubMed:18045533). Inefficiently degrades oxidized DNA, such as that generated upon antimicrobial reactive oxygen production or upon absorption of UV light (PubMed:23993650). During GZMA-mediated cell death, contributes to DNA damage in concert with NME1 (PubMed:16818237). NME1 nicks one strand of DNA and TREX1 removes bases from the free 3' end to enhance DNA damage and prevent DNA end reannealing and rapid repair (PubMed:16818237).
Cellular Location	Nucleus. Cytoplasm, cytosol. Endoplasmic reticulum membrane; Peripheral membrane protein. Note=Retained in the cytoplasm through the C-terminal region (By similarity). Localization to the endoplasmic reticulum membrane is required to direct TREX1 to ruptured micronuclei (PubMed:33476576). In response to DNA damage, translocates to the nucleus where it is specifically recruited to replication foci (PubMed:16818237). Translocation to the nucleus also occurs during GZMA-mediated cell death (PubMed:16818237) {ECO:0000250|UniProtKB:Q91XB0, ECO:0000269|PubMed:16818237, ECO:0000269|PubMed:33476576}
Tissue Location	Detected in thymus, spleen, liver, brain, heart, small intestine and colon.

Background

Three prime repair exonuclease 1 is an enzyme that in humans is encoded by the TREX1 gene. This gene encodes a nuclear protein with 3' exonuclease activity. The encoded protein may play a role in DNA repair and serve as a proofreading function for DNA polymerase. It is also a component of the SET complex, and acts to rapidly degrade 3' ends of nicked DNA during granzyme A-mediated cell death. Mutations in this gene result in Aicardi-Goutieres syndrome, chilblain lupus, Cree encephalitis, and other diseases of the immune system. Alternative splicing results in multiple transcript variants.

Images

Anti-TREX1 Picoband antibody, ABO12434, Western



blottingAll lanes: Anti TREX1 (ABO12434) at 0.5ug/mlWB: SMMC Whole Cell Lysate at 40ugPredicted bind size: 39KDObserved bind size: 33KD

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.