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TREX1 Rabbit mAb

Catalog # AP74886

Product Information

Application	WB, IHC-P, IHC-F
Primary Accession	Q9NSU2
Reactivity	Human
Host	Rabbit
Clonality	Monoclonal Antibody
Isotype	IgG
Conjugate	Unconjugated
Purification	Affinity Purified
Calculated MW	33212

Additional Information

Gene ID	11277
Other Names	TREX1
Dilution	WB~~1:1000-1:5000 IHC-P~~N/A IHC-F~~N/A
Format	Liquid in 50mM Tris-Glycine(pH 7.4), 0.15M NaCl, 40%Glycerol, 0.01% sodium azide and 0.05% BSA.
Storage	Store at 4°C short term. Aliquot and store at -20°C long term. Avoid freeze/thaw cycles.

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}

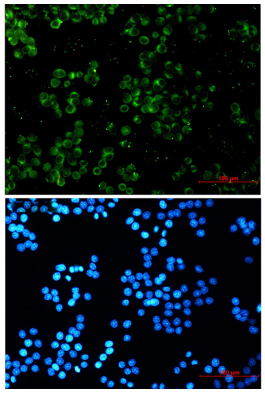
Tissue Location

Detected in thymus, spleen, liver, brain, heart, small intestine and colon.

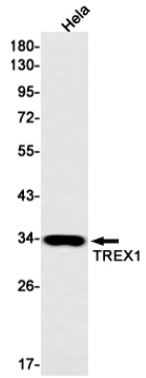
Background

TREX1 is the major 3'->5' DNA exonuclease in human cells. The protein is a non processive exonuclease that may serve a proofreading function for a human DNA polymerase.

Images

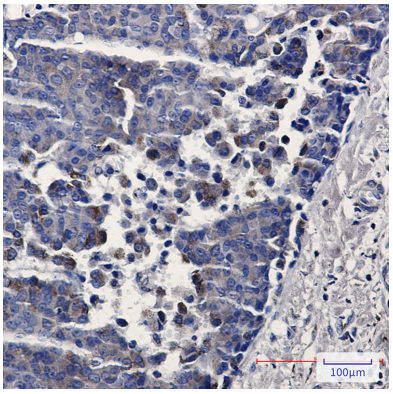


Immunocytochemistry analysis of TREX1 (green) in Hela using TREX1 antibody,and DAPI(blue).



Western blot analysis of TREX1 in Hela lysates using TREX1 antibody.

Immunohistochemistry analysis of paraffin-embedded Human breast cancer tissue using TREX1 antibody. High-pressure and temperature Sodium Citrate pH 6.0 was used for antigen retrieval.



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