Three Prime Repair Exonuclease 1 (TREX1) Human Recombinant Protein

PRODUCT OVERVIEW

Product Name	Three prime repair exonuclease 1 (TREX1), Recombinant Protein
Full Product Name	Recombinant Human Three prime repair exonuclease 1 (TREX1)
Product Gene Name	TREX1 recombinant protein
Product Synonym Gene Name	TREX1
Sequence	MGPGARRQGR IVQGRPEMCF CPPPTPLPPL RILTLGTHTP TPCSSPGSAA GTYPTMGSQA LPPGPMQTLI FFDMEATGLP FSQPKVTELC LLAVHRCALE SPPTSQGPPP TVPPPPRVVD KLSLCVAPGK ACSPAASEIT GLSTAVLAAH GRQCFDDNLA NLLLAFLRRQ PQPWCLVAHN GDRYDFPLLQ AELAMLGLTS ALDGAFCVDS ITALKALERA SSPSEHGPRK SYSLGSIYTR LYGQSPPDSH TAEGDVLALL SICQWRPQAL LRWVDAHARP FGTIRPMYGV TASARTKPRP SAVTTTAHLA TTRNTSPSLG ESRGTKDLPP VKDPGALSRE GLLAPLGLLA ILTLAVATLY GLSLATPGE
Host	E Coli or Yeast or Baculovirus or Mammalian Cell
Form/Format	Lyophilized or liquid (Format to be determined during the manufacturing process)
Purity/Purification	Greater or equal to 85% purity as determined by SDS-PAGE. (lot specific)
Preparation and Storage	Store at -20 degrees C. For long-term storage, store at -20 degrees C or -80 degrees C. Store working aliquots at 4 degrees C for up to one week. Repeated freezing and thawing is not recommended.
Molecular Weight	32,276 Da
Sequence Positions	1-369aa; Full Length
Tag Information	This protein contains an N-terminal tag and may also contain a C-terminal tag. Tag types are determined by various factors including tag-protein stability, please inquire for tag information.
Sterility	Sterile filter available upon request.
Endotoxin	Low endotoxin available upon request.
OMIM	152700
3D Structure	ModBase 3D Structure for Q9NSU2
Species	Human
Sequence Note	The sequence corresponds to Uniprot Q9NSU2 version 2017_10/2017_10|25-Oct-2017
ISO Certification	Manufactured in an ISO 9001:2015 Certified Laboratory.
Related Product Information for TREX1 recombinant protein	This gene encodes 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. 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, and Cree encephalitis. Multiple transcript variants encoding different isoforms have been found for this gene.
Other Notes	Small volumes of TREX1 recombinant protein vial(s) may occasionally become entrapped in the seal of the product vial during shipment and storage. If necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the container`s cap. Certain products may require to ship with dry ice and additional dry ice fee may apply.
Searchable Terms for TREX1 purchase	MBS1332376 is a recombinant protein targeting TREX1. Also known as Recombinant Human Three prime repair exonuclease 1 (TREX1). Host: E Coli or Yeast or Baculovirus or Mammalian Cell.

ADDITIONAL DETAILS

NCBI/Uniprot data below describe general gene information for TREX1. It may not necessarily be applicable to this product.

NCBI GI #	404434375
NCBI GeneID	11277
NCBI Accession #	NP_009179.2
UniProt Primary Accession #	Q9NSU2
UniProt Secondary Accession #	Q8TEU2; Q9BPW1; Q9Y4X2; B2RCN9
UniProt Related Accession #	Q9NSU2
GenBank Nucleotide #	NM_007248.4
NCBI Official Full Name	three-prime repair exonuclease 1 isoform c
NCBI Official Synonym Full Names	three prime repair exonuclease 1
NCBI Official Symbol	TREX1
NCBI Official Synonym Symbols	CRV; AGS1; DRN3; HERNS
UniProt Protein Name	Three-prime repair exonuclease 1
UniProt Synonym Protein Names	3'-5' exonuclease TREX1
Protein Family	Three-prime repair exonuclease
UniProt Gene Name	TREX1
UniProt Synonym Gene Names	DNase III
NCBI Protein Information	three-prime repair exonuclease 1
NCBI Summary for TREX1	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. 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. [provided by RefSeq, Sep 2012]
UniProt Comments for TREX1	Major cellular 3'-to-5' DNA exonuclease which digests single-stranded DNA (ssDNA) and double-stranded DNA (dsDNA) with mismatched 3' termini. Prevents cell-intrinsic initiation of autoimmunity. Acts by metabolizing DNA fragments from endogenous retroelements, including L1, LTR and SINE elements. Unless degraded, these DNA fragments accumulate in the cytosol and activate the IFN-stimulatory DNA (ISD) response and innate immune signaling. Prevents chronic ATM-dependent checkpoint activation, by processing ssDNA polynucleotide species arising from the processing of aberrant DNA replication intermediates. Inefficiently degrades oxidized DNA, such as that generated upon antimicrobial reactive oxygen production or upon absorption of UV light. During GZMA-mediated cell death, contributes to DNA damage in concert with NME1. 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.
Research Articles on TREX1	**1.** The activation of interferon-induced genes is controlled by the JAK-STAT system; therefore, JAK inhibitors were successfully used in several cases to treat type 1 interferonopathies. Experience with this treatment modality is continuously growing.
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