

## Rabbit Polyclonal TREX1 antibody FITC

Catalog Number: TREX1-FITC

Lot Number:

### General Information

<b>Product</b>	TREX1 Antibody FITC
<b>Description</b>	Three-prime repair exonuclease 1 Antibody FITC-Conjugated
<b>Accession #</b>	Uniprot: Q9NSU2
<b>Verified Applications</b>	ELISA, IP, WB
<b>Species Cross Reactivity</b>	Human, Mouse, Rat
<b>Host</b>	Rabbit
<b>Immunogen</b>	Synthetic peptide taken within amino acid region 220-245 on human TREX1 protein.
<b>Alternative Nomenclature</b>	3' 5' exonuclease TREX1 antibody, 3' repair exonuclease 1 antibody, AGS1 antibody, AGS5 antibody, CRV antibody, Deoxyribonuclease III, dnaQ/mutD (E. coli) like antibody, DNase III antibody, DRN3 antibody, HERNS antibody, Three prime repair exonuclease 1 antibody

### Physical Properties

<b>Quantity</b>	100 µg
<b>Volume</b>	100 µl
<b>Form</b>	FITC-Conjugated Immunoglobulins
<b>Immunoglobulin &amp; Concentration</b>	.50 mg/ml IgG in antibody stabilization buffer
<b>Storage</b>	Store at -20°C for long term storage.

### Recommended Dilutions

<b>ELISA</b>	1:10,000
<b>Immunoprecipitation</b>	1:200
<b>Western Blot</b>	1:500

### Related Products

### Catalog #

<b>Affinity Purified</b>	TREX1-101AP
<b>BIOTIN-conjugated</b>	TREX1-BIOTIN
<b>Antigenic Blocking Peptide</b>	P-TREX1
<b>Western Blot Positive Control</b>	PC-TREX1

## Overview:

Mammalian cells encode two 3'-5' exonucleases (TREX1 and TREX2) in the cDNA sequences. TREX-1 (three prime repair exonuclease 1), also known as trophoblast expressed 1, is a member of the exonuclease superfamily and belongs to the TREX family. The major DNA-specific 3'-5' exonuclease of mammalian cells is TREX1. It acts on single-stranded DNA (ssDNA) to negatively regulate the interferon-stimulatory DNA (ISD) response. TREX1 degrades ssDNA (single-stranded DNA) more efficiently than dsDNA (double-stranded DNA). TREX1 is only found in mammals and has an extended C-terminal domain containing a leucine-rich sequence required for its association with the endoplasmic reticulum. It localizes to the nucleus and exists as a homodimer (1). TREX1 protein is composed of 369 amino acids and the N-terminal 242 amino acids contain the catalytic domain. The C-terminal region (CTR) localizes TREX1 to the cytosolic compartment and its modification by ubiquitination affects cellular localization. Transfection of TREX1 deletion constructs into human cells demonstrated that this sequence is required for ubiquitination at multiple lysine residues through a "non-canonical" ubiquitin linkage (3). Members of the TREX family are involved in DNA metabolism and repair. In humans, there are three TREX1 isoforms generated through alternative splicing with predicted molecular weights of 32, 34, and 40 kDa. TREX-1 is expressed in spleen, liver, thymus, colon, heart, brain and small intestine. Mutations in the gene encoding TREX1 are associated with autoimmune diseases including Aicardi-Goutieres syndrome, systemic lupus erythematosus, chilblain lupus (CHBL) and type 5 (AGS5) and autosomal dominant retinal vasculopathy with (CRV) cerebral leukodystrophy (2). TREX1 prevents the cell-intrinsic innate immune response to human immunodeficiency virus (HIV) by digesting excess HIV DNA that would normally trigger induction of type I interferon. TREX1, an exonuclease, is also involved in response to oxidative stress and apoptosis (4).

The human TREX1 gene maps to chromosome 3p21.31 and encodes a 369 amino acid protein. TREX1 antibodies will not cross-react with the related protein TREX2. TREX1 selective antibodies were generated against a peptide taken from the human protein. The TREX1-selective antibodies are affinity purified on an immobilized antigen based affinity matrix. The isolated antibodies were then stabilized in antibody stabilization buffer for long-term storage. The TREX1-selective antibodies are fully characterized for applications in western blotting and ELISA, at the recommended dilutions. Western blot positive control samples in "ready-to-use" SDS-PAGE sample buffer and limited quantities of antigenic blocking peptide for TREX1 antibody are available. Antibodies can be conjugated to secondary enzymes or fluorophores as an additional service. For a complete listing of all FabGennix antibodies and lab services, please visit <http://fabgennix.com>.

### References:

1. Mazur DJ, Perrino FW. Identification and expression of the TREX1 and TREX2 cDNA sequences encoding mammalian 3'-->5' exonucleases. Wake Forest University School of Medicine, Department of Biochemistry, North Carolina 27157, USA. J Biol Chem. 1999 Jul 9;274
2. Lindahl T, Barnes DE, Yang YG, Robins P. Biochemical properties of mammalian TREX1 and its association with DNA replication and inherited inflammatory disease. Biochem Soc Trans. 2009 Jun;37(Pt 3):535-8. doi: 10.1042/BST0370535.
3. Orebaugh CD, et al, The TREX1 C-terminal region controls cellular localization through ubiquitination. J Biol Chem. 2013 Oct 4;288(40). Epub 2013 Aug 26.
4. Barizzone N, Monti S, Mellone S, Godi M, Marchini M, Scorza R, Danieli MG, D'Alfonso S. Rare Variants in the TREX1 Gene and Susceptibility to Autoimmune Diseases. Biomed Res Int. 2013;2013:471703. Epub 2013 Oct.9

\* For users who may require large amounts of the products listed above, please inquire about bulk material discounts.

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