abcam

ab187363

Anti-TXNRD1 antibody [EPNCIR129] - BSA and Azide free

Recombinant | RabMAb

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Carrier free	Yes
Clone number	EPNCIR129
Purification technique	Affinity purification Protein A
Concentration	1.004 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC-P

Tested

Species	Human
Dilution info	-

Notes	(heat to 98 degrees C, allow to cool for 10-20 minutes)

Predicted

Species	Mouse, Rat
Dilution info	-
Notes	-

IP

Tested

Species	Human
Dilution info	-
Notes	-

Predicted

Species	Mouse, Rat
Dilution info	-
Notes	-

WB

Expected

Species	Mouse, Rat, Human
Dilution info	Use at an assay dependent concentration.
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	-
Notes	-

Predicted

Species	Mouse, Rat
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
Notes	ab199376 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody.

Predicted

Species	Mouse, Rat
Dilution info	-
Notes	-

Target data

See full target information TXNRD1

Function Reduces disulfide protein thioredoxin (Trx) to its dithiol-containing form (PubMed:8577704). Homodimeric flavoprotein involved in the regulation of cellular redox reactions, growth and differentiation. A selenocysteine residue at the C-terminal active site is essential for catalysis (Probable). Also has reductase activity on hydrogen peroxide (H2O2) (PubMed:10849437). Isoform 1. Induces actin and tubulin polymerization, leading to formation of cell membrane protrusions. Isoform 4. Enhances the transcriptional activity of estrogen receptors ESR1 and ESR2. Isoform 5. Enhances the transcriptional activity of the estrogen receptor ESR2 only (PubMed:15199063). Mediates cell death induced by a combination of interferon-beta and retinoic acid (PubMed:9774665).

Storage

Shipped at conditions Blue Ice

Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	+4°C
Storage information	Do Not Freeze

Notes

ab187363 is the carrier-free version of ab124954.
This antibody was developed as part of a collaboration between Epitomics, the National Cancer Institute's Center for Cancer Research and the lab of Dolph Hatfield. View antibodies from NCI Center for Cancer Research Collaboration.

Patented technology
Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMAb® patents.

What are the advantages of a recombinant monoclonal antibody?
This product is a recombinant monoclonal antibody, which offers several advantages including:

- High batch-to-batch consistency and reproducibility
- Improved sensitivity and specificity
- Long-term security of supply
- Animal-free batch production

For more information, read more on recombinant antibodies.

Conjugation ready
Our carrier-free antibodies are typically supplied in a PBS-only formulation, purified and free of BSA, sodium azide and glycerol. This conjugation-ready format is designed for use with fluorochromes, metal isotopes, oligonucleotides, and enzymes, which makes them ideal for antibody labelling, functional and cell-based assays, flow-based assays (e.g. mass cytometry) and Multiplex Imaging applications.

Use our conjugation kits for antibody conjugates that are ready-to-use in as little as 20 minutes with 1 minute hands-on-time and 100% antibody recovery: available for fluorescent dyes, HRP, biotin and gold.

Compatibility
This product is compatible with the Maxpar® Antibody Labeling Kit from Fluidigm, without the need for antibody preparation. Maxpar® is a trademark of Fluidigm Canada Inc.

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	Thioredoxin reductase 1 (TXNRD1) also known as TRXR1 is a selenoprotein that plays an important role in maintaining cellular redox balance by catalyzing the reduction of thioredoxin (TRX). It possesses a molecular mass of approximately 55 kDa. TXNRD1 can be found in many tissues displaying a stronger presence in the liver kidney and pancreas indicating its significance in these organs. The enzyme

	contains a selenocysteine residue at its active site which is essential for its enzymatic activity.
Biological function summary	TXNRD1 functions as an integral part of the thioredoxin system which includes thioredoxin and NADPH. It maintains the redox homeostasis in cells by regenerating oxidized thioredoxin. This action allows thioredoxin to in turn reduce disulfide bonds in various substrate proteins. Furthermore TXNRD1 participates in regulating cellular processes such as DNA synthesis and repair signal transduction and antioxidant defense. It does not work alone but collaborates with various redox-active components to achieve its roles.
Pathways	TXNRD1 participates in the antioxidant defense and redox signaling pathways. Within the antioxidant defense pathway TXNRD1 along with thioredoxin provides resistance to oxidative stress. In the redox signaling pathway the protein interacts with NF-κB signaling processes impacting cell inflammation and apoptosis. These pathways are vital for cellular health and are connected through thioredoxin emphasizing the interconnected nature of TXNRD1-related processes.
Associated diseases and disorders	TXNRD1 has associations with cancer and neurodegenerative diseases. Elevated levels of TXNRD1 have been observed in various cancers including lung and hepatocellular carcinoma suggesting a role in tumor growth and survival through redox regulation. Additionally TXNRD1 is linked to neurodegenerative diseases such as Alzheimer's where oxidative stress plays a contributory role. In these conditions TXNRD1 interacts closely with other redox proteins like glutathione reductase highlighting its potential as a therapeutic target.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

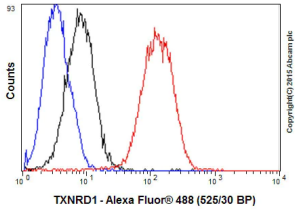
We do not recommend this combination. It is not covered by our product promise.

We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

Full details and terms and conditions can be found here:
Terms & Conditions.

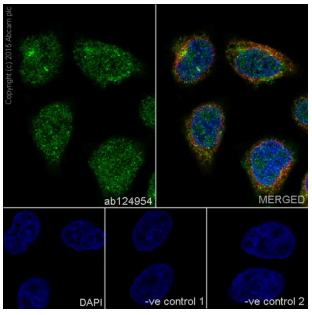
5 product images



Flow Cytometry (Intracellular) - Anti-TXNRD1 antibody [EPNCIR129] - BSA and Azide free (ab187363)

TXNRD1 Flow Cytometry (Intracellular) staining using rabbit Anti-TXNRD1 antibody

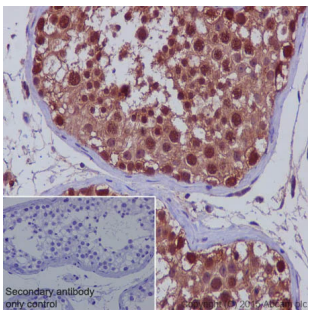
Overlay histogram showing HeLa cells fixed in 4% PFA and stained with purified ab124954 at a dilution of 1 in 120 (red line). The secondary antibody used was FITC goat anti-rabbit at a dilution of 1 in 500. Rabbit monoclonal IgG was used as an isotype control (black line) and cells incubated in the absence of both primary and secondary antibody were used as a negative control (blue line). This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab124954).



Immunocytochemistry/ Immunofluorescence - Anti-TXNRD1 antibody [EPNCIR129] - BSA and Azide free (ab187363)

TXNRD1 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-TXNRD1 antibody

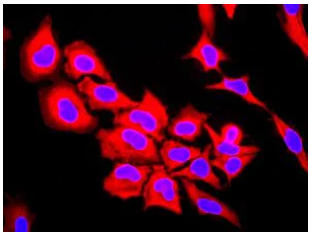
Immunofluorescence staining of HeLa cells with purified ab124954 at a working dilution of 1/150, counter-stained with DAPI. The secondary antibody was Alexa Fluor® 488 goat anti-rabbit (ab150077), used at a dilution of 1/1000. ab7291, a mouse anti-tubulin antibody (1/1000), was used to stain tubulin along with ab150120 (Alexa Fluor® 594 goat anti-mouse, 1/1000), shown in the top right hand panel. The cells were fixed in 4% PFA and permeabilized using 0.1% Triton X 100. The negative controls are shown in bottom middle and right hand panels - for negative control 1, purified ab124954 was used at a dilution of 1/500 followed by an Alexa Fluor® 594 goat anti-mouse antibody (ab150120) at a dilution of 1/500. For negative control 2, ab7291 (mouse anti-tubulin) was used at a dilution of 1/500 followed by an Alexa Fluor® 488 goat anti-rabbit antibody (ab150077) at a dilution of 1/400.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab124954).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-TXNRD1 antibody [EPNCIR129] - BSA and Azide free (ab187363)

TXNRD1 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-TXNRD1 antibody

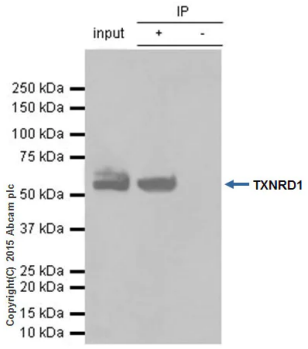
Immunohistochemical staining of paraffin embedded human testis with purified ab124954 at a working dilution of 1/150. The secondary antibody used is HRP goat anti-rabbit IgG H&L (ab97051) at 1/500. The sample is counter-stained with hematoxylin. Antigen retrieval was perfomed using Tris-EDTA buffer, pH 9.0. PBS was used instead of the primary antibody as the negative control, and is shown in the inset.This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab124954).



Immunocytochemistry/ Immunofluorescence - Anti-TXNRD1 antibody [EPNCIR129] - BSA and Azide free (ab187363)

TXNRD1 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-TXNRD1 antibody

Unpurified ab124954, at 1/100 dilution, staining TXNRD1 in HeLa cells by Immunofluorescence. This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab124954).



Immunoprecipitation - Anti-TXNRD1 antibody [EPNCIR129] - BSA and Azide free (ab187363)

ab124954 (purified) at 1/40 immunoprecipitating TXNRD1 in 10 µg Jurkat (Lanes 1 and 2, observed at 55 kDa). Lane 3 - PBS. For western blotting, VeriBlot for IP Detection Reagent (HRP) (ab131366), was used for detection at 1/10,000 dilution. Blocking buffer and concentration: 5% NFDM/TBST
Dilution buffer and concentration: 5% NFDM/TBST
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab124954).

All lanes:
Immunoprecipitation - Anti-TXNRD1 antibody [EPNCIR129] (ab124954)

Predicted band size: 71 kDa

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