abcam

ab124954

Anti-TXNRD1 antibody [EPNCIR129]

Recombinant | RabMAb | 20ul selling size

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Preservative: 0.01% Sodium azide Constituents: PBS, 40% Glycerol (glycerin, glycerine), 0.05% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	EPNCIR129
Purification technique	Affinity purification Protein A
Concentration	0.719 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC-P

Tested

Species	Human
Dilution info	1/100 - 1/250
Notes	(Heat to 98°C, allow to cool for 10-20 minutes) Perform heat-mediated antigen retrieval before commencing with IHC staining protocol.

Expected

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

IP

Tested

Species	Human
Dilution info	1/10 - 1/100
Notes	-

Expected

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

WB

Tested

Species	Mouse
Dilution info	1/1000 - 1/10000
Notes	-

Species	Rat
Dilution info	1/1000 - 1/10000
Notes	-

Species	Human
Dilution info	1/1000 - 1/10000
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	1/100 - 1/250
Notes	-

Expected

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

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/100 - 1/500
Notes	ab172730 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody.

Expected

Species	Mouse, Rat
Dilution info	Use at an assay dependent concentration.
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	Conditional Ambient
Appropriate short-term storage duration	1-2 weeks
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Aliquoting information	Upon delivery aliquot
Storage information	Stable for 12 months at -20°C

Notes

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.

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

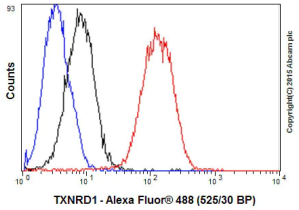
We do not recommend this combination. It is not covered by our product promise.

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.

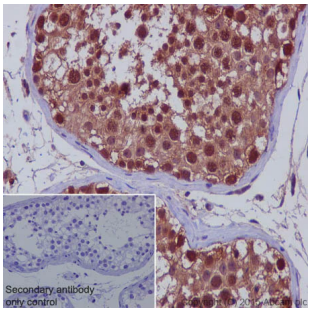
9 product images



Flow Cytometry (Intracellular) - Anti-TXNRD1 antibody [EPNCIR129] (ab124954)

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

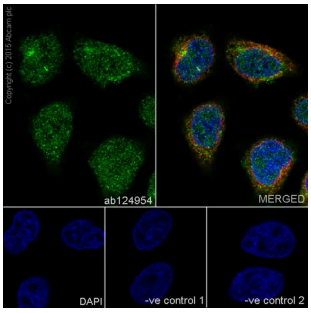
Overlay histogram showing HeLa cells fixed in 4% PFA and stained with purified ab124954 at a dilution of 1 in 120 (red line). The secondary antibody used was FITC goat anti-rabbit at a dilution of 1 in 500. Rabbit monoclonal IgG was used as an isotype control (black line) and cells incubated in the absence of both primary and secondary antibody were used as a negative control (blue line).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-TXNRD1 antibody [EPNCIR129] (ab124954)

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

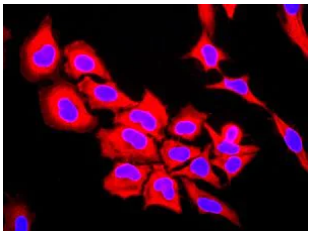
Immunohistochemical staining of paraffin embedded human testis with purified ab124954 at a working dilution of 1/150. The secondary antibody used is HRP goat anti-rabbit IgG H&L (ab97051) at 1/500. The sample is counter-stained with hematoxylin. Antigen retrieval was perfomed using Tris-EDTA buffer,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



Immunocytochemistry/ Immunofluorescence - Anti-TXNRD1 antibody [EPNCIR129] (ab124954)

TXNRD1 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-TXNRD1 antibody

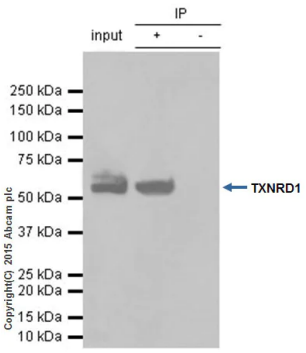
Immunofluorescence staining of HeLa cells with purified ab124954 at a working dilution of 1/150, counter-stained with DAPI. The secondary antibody was Alexa Fluor® 488 goat anti-rabbit (ab150077), used at a dilution of 1/1000. ab7291, a mouse anti-tubulin antibody (1/1000), was used to stain tubulin 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.



Immunocytochemistry/ Immunofluorescence - Anti-TXNRD1 antibody [EPNCIR129] (ab124954)

TXNRD1 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-TXNRD1 antibody

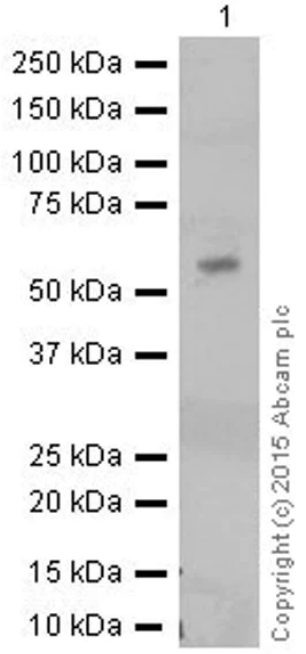
Unpurified ab124954, at 1/100 dilution, staining TXNRD1 in HeLa cells by Immunofluorescence.



Immunoprecipitation - Anti-TXNRD1 antibody [EPNCIR129] (ab124954)

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

Predicted band size: 71 kDa



Western blot - Anti-TXNRD1 antibody [EPNCIR129] (ab124954)

TXNRD1 Western blot staining of HeLa cell lysate using rabbit Anti-TXNRD1 antibody

Blocking buffer: 5% NFDM/TBST
Dilution buffer: 5% NFDM/TBST
All lanes:
Western blot - Anti-TXNRD1 antibody [EPNCIR129] (ab124954) at 1/10000 dilution

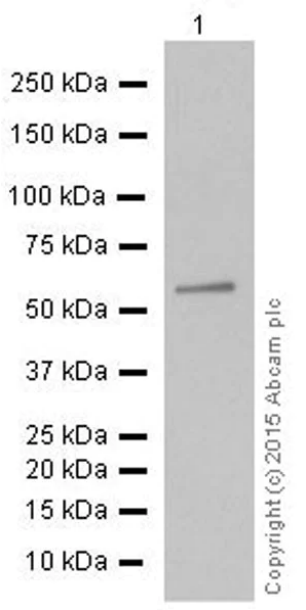
All lanes:
HeLa cell lysate at 10 µg

Secondary

All lanes:
HRP goat anti-rabbit IgG (H+L) at 1/100000 dilution

Predicted band size: 71 kDa, 83 kDa

Observed band size: 55 kDa



Western blot - Anti-TXNRD1 antibody [EPNCIR129] (ab124954)

TXNRD1 Western blot staining of HepG2 cell lysate using rabbit Anti-TXNRD1 antibody

Blocking buffer: 5% NFDM/TBST
Dilution buffer: 5% NFDM/TBST
All lanes:
Western blot - Anti-TXNRD1 antibody [EPNCIR129] (ab124954) at 1/10000 dilution

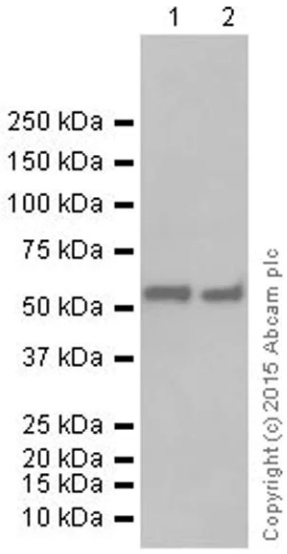
All lanes:
HepG2 cell lysate at 10 µg

Secondary

All lanes:
HRP goat anti-rabbit IgG (H+L) at 1/100000 dilution

Predicted band size: 71 kDa

Observed band size: 55 kDa



Western blot - Anti-TXNRD1 antibody [EPNCIR129] (ab124954)

TXNRD1 Western blot staining using rabbit Anti-TXNRD1 antibody

Blocking buffer: 5% NFDM/TBST
Dilution buffer: 5% NFDM/TBST
All lanes:
Western blot - Anti-TXNRD1 antibody [EPNCIR129] (ab124954) at 1/10000 dilution

Lane 1:
rat liver lysate at 10 µg

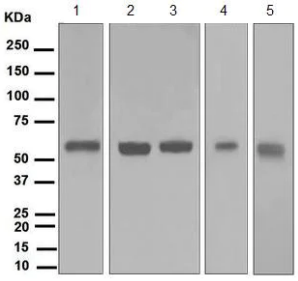
Lane 2:
NIH/3T3 cell lysate at 10 µg

Secondary

All lanes:
HRP goat anti-rabbit IgG (H+L) at 1/20000 dilution

Predicted band size: 71 kDa

Observed band size: 55 kDa



Western blot - Anti-TXNRD1 antibody [EPNCIR129] (ab124954)

All lanes:
Western blot - Anti-TXNRD1 antibody [EPNCIR129] (ab124954) at 1/1000 dilution

Lane 1:
Mouse liver lysates at 10 µg

Lane 2:
NIH 3T3 lysates at 10 µg

Lane 3:
RAW264.7 lysates at 10 µg

Lane 4:
Human fetal liver lysates at 10 µg

Lane 5:
Rat liver lysates at 10 µg

Secondary

All lanes:
Goat anti-Rabbit HRP at 1/2000 dilution

Predicted band size: 71 kDa

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