abcam

ab240292

# Anti-Thioredoxin 2 antibody [EPR15225] - 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** | EPR15225 |
| **Purification technique** | Affinity purification Protein A |
| **Concentration** | 1.065 mg/mL The concentration of this product may be batch-dependent<br>Batch concentration finder → |

## Reactivity data

## WB

### Expected

| | |
|---|---|
| **Species** | Mouse, Human |
| **Dilution info** | Use at an assay dependent concentration. |

| | |
|---|---|
| **Notes** | - |

### Predicted

| | |
|---|---|
| **Species** | Rat |
| **Dilution info** | - |
| **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** | - |

## IHC-P

### Tested

| | |
|---|---|
| **Species** | Human |
| **Dilution info** | - |
| **Notes** | - |

### Predicted

| | |
|---|---|
| **Species** | Mouse, Rat |
| **Dilution info** | - |
| **Notes** | - |

## Target data

See full target information TXN2

**Function** Important for the control of mitochondrial reactive oxygen species homeostasis, apoptosis regulation and cell viability (PubMed:12032145, PubMed:12080052, PubMed:26626369) Is involved in various redox reactions including the reduction of protein disulfide bonds, through the reversible oxidation of its active center dithiol to a disulfide (By similarity).

## 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

ab240292 is the carrier-free version of ab185544.

**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 2 also known as TXN2 is a protein that functions mainly as an oxidoreductase. It facilitates the reduction of other proteins through cysteine thiol-disulfide exchange which is important for maintaining cellular redox balance. This protein exists in the mitochondria where it is expressed ubiquitously across tissues. Thioredoxin 2 has a molecular mass of approximately 18 kDa. The presence of TXN2 in all cellular compartments suggests its importance in various cellular processes involving oxidative stress response. |
| **Biological function summary** | Thioredoxin 2 participates in regulating mitochondrial redox homeostasis ensuring the protection of mitochondrial DNA against oxidative damage. It acts as a part of the mitochondrial thioredoxin system which includes thioredoxin reductase and NADPH as components. This system is important for the control of mitochondrial reactive oxygen species (ROS) and supports mitochondrial function by facilitating the synthesis of deoxyribonucleotides. The protein therefore plays an important role in cellular antioxidant defenses and in modulating mitochondrial apoptotic pathways. |
| **Pathways** | The involvement of Thioredoxin 2 is pivotal in several cellular signaling cascades including the antioxidant defense and apoptosis pathways. Within the redox signaling pathways TXN2 works in conjunction with cytochrome c and caspases to regulate apoptosis and prevent uncontrolled cell death. In pathways related to cellular oxidative stress Thioredoxin 2 interacts closely with glutathione to mediate cellular responses to oxidative damage maintaining balance between the production and removal of ROS. |

| | |
|---|---|
| **Associated diseases and disorders** | The dysregulation of Thioredoxin 2 correlates with various human conditions such as cancer and neurodegenerative diseases. In cancer alterations in TXN2 levels can affect cell survival and proliferation often by interacting with other antioxidant proteins like peroxiredoxins. For neurodegenerative diseases an imbalance in Thioredoxin 2 activity contributes to neuronal damage through disrupted oxidative stress regulation. This highlights TXN2's potential as a therapeutic target for disorders connected to oxidative stress imbalances. |

## 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**

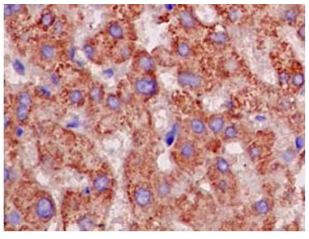
We do not recommend this combination. It is not covered by our product promise.

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.

## 4 product images

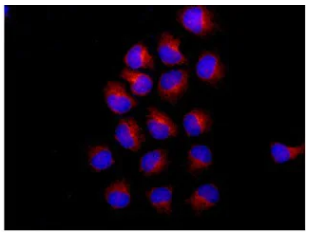


### Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Thioredoxin 2 antibody [EPR15225] - BSA and Azide free (ab240292)

Thioredoxin 2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Thioredoxin 2 antibody

Immunohistochemical analysis of paraffin-embedded Human liver tissue labeling Thioredoxin 2 with ab185544 at 1/500 dilution. Counter stain Hematoxylin.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab185544).

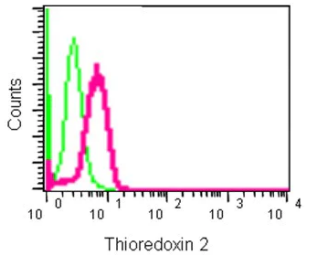
Perform heat mediated antigen retrieval with EDTA buffer pH 9 before commencing with IHC staining protocol.



## Immunocytochemistry/ Immunofluorescence - Anti-Thioredoxin 2 antibody [EPR15225] - BSA and Azide free (ab240292)

Thioredoxin 2 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-Thioredoxin 2 antibody

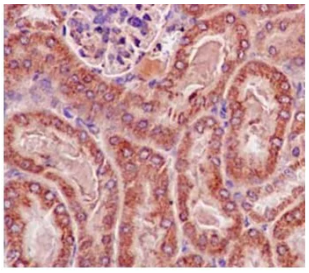
Immunofluorescent analysis of 4% paraformaldehyde fixed HeLa cells labeling Thioredoxin 2 with ab185544 at 1/250 dilution. Secondary antibody Goat anti rabbit IgG (Alexa Fluor®555) at a 1/200 dilution. Counterstained with Dapi blue.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab185544).




## Flow Cytometry (Intracellular) - Anti-Thioredoxin 2 antibody [EPR15225] - BSA and Azide free (ab240292)

Thioredoxin 2 Flow Cytometry (Intracellular) staining using rabbit Anti-Thioredoxin 2 antibody

Intracellular Flow Cytometry analysis of 2% paraformaldehyde fixed K562 cells labeling Thioredoxin 2 with ab185544 at 1/150 dilution (pink) or a rabbit IgG isotype control (green), followed by secondary Goat anti rabbit IgG (FITC) at 1/150 dilution.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab185544).



## Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Thioredoxin 2 antibody [EPR15225] - BSA and Azide free (ab240292)

Immunohistochemical analysis of paraffin-embedded Mouse kidney tissue labeling Thioredoxin 2 with ab185544 at 1/500 dilution. Counter stain Hematoxylin.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab185544).

Perform heat mediated antigen retrieval with EDTA buffer pH 9 before commencing with IHC staining protocol.

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