

**Anti-Thioredoxin 2/TXN2 Antibody Picoband™ (monoclonal, 4H3)**  
Catalog # ABO14949

**Specification**

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**Anti-Thioredoxin 2/TXN2 Antibody Picoband™ (monoclonal, 4H3) - Product Information**

Application	WB, IHC, IF, ICC, FC
Primary Accession	<a href="#">Q99757</a>
Host	Mouse
Isotype	Mouse IgG2a
Reactivity	Rat, Human, Mouse
Clonality	Monoclonal
Format	Lyophilized

**Description**

Anti-Thioredoxin 2/TXN2 Antibody Picoband™ (monoclonal, 4H3) . Tested in Flow Cytometry, IF, IHC, ICC, WB applications. This antibody reacts with Human, Mouse, Rat.

**Reconstitution**

Add 0.2ml of distilled water will yield a concentration of 500ug/ml.

**Anti-Thioredoxin 2/TXN2 Antibody Picoband™ (monoclonal, 4H3) - Additional Information**

**Gene ID** 25828

**Other Names**

Thioredoxin, mitochondrial, MTRX, Mt-Trx, Thioredoxin-2, TXN2, TRX2

**Calculated MW**

14 kDa KDa

**Application Details**

Western blot, 0.1-0.5 µg/ml, Human, Mouse, Rat<br> Immunohistochemistry (Paraffin-embedded Section), 0.5-1 µg/ml, Human, Mouse, Rat<br> Immunofluorescence, 2 µg/ml, Human<br> Immunocytochemistry/Immunofluorescence, 2 µg/ml, Human<br> Flow Cytometry, 1-3 µg/1x10<sup>6</sup> cells, Human<br>

**Subcellular Localization**

Mitochondrion.

**Tissue Specificity**

Widely expressed in adult (at protein level) and fetal tissues.

**Contents**

Each vial contains 4mg Trehalose, 0.9mg NaCl, 0.2mg Na<sub>2</sub>HPO<sub>4</sub>, 0.05mg NaN<sub>3</sub>.

**Immunogen**

E.coli-derived human Thioredoxin 2/TXN2 recombinant protein (Position: T60-G166).

**Purification**

Immunogen affinity purified.

**Cross Reactivity**

No cross-reactivity with other proteins.

**Storage**

Store at  $-20^{\circ}\text{C}$  for one year from date of receipt. After reconstitution, at  $4^{\circ}\text{C}$  for one month. It can also be aliquotted and stored frozen at  $-20^{\circ}\text{C}$  for six months. Avoid repeated freeze-thaw cycles.

**Anti-Thioredoxin 2/TXN2 Antibody Picoband™ (monoclonal, 4H3) - Protein Information**

**Name** TXN2

**Synonyms** TRX2

**Function**

Important for the control of mitochondrial reactive oxygen species homeostasis, apoptosis regulation and cell viability. Possesses a dithiol-reducing activity.

**Cellular Location**

Mitochondrion

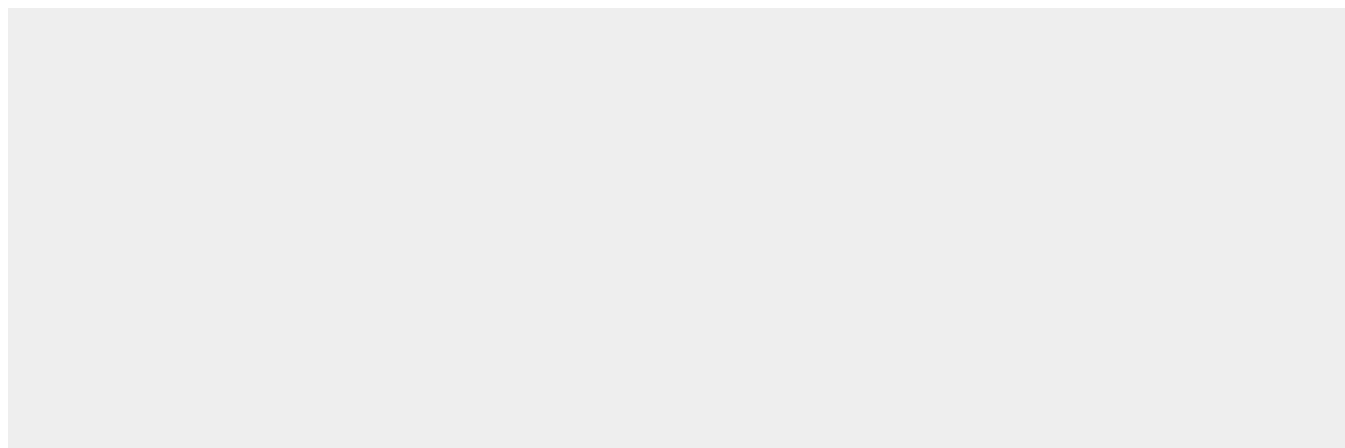
**Tissue Location**

Widely expressed in adult (at protein level) and fetal tissues.

**Anti-Thioredoxin 2/TXN2 Antibody Picoband™ (monoclonal, 4H3) - Protocols**

Provided below are standard protocols that you may find useful for product applications.

- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

**Anti-Thioredoxin 2/TXN2 Antibody Picoband™ (monoclonal, 4H3) - Images**

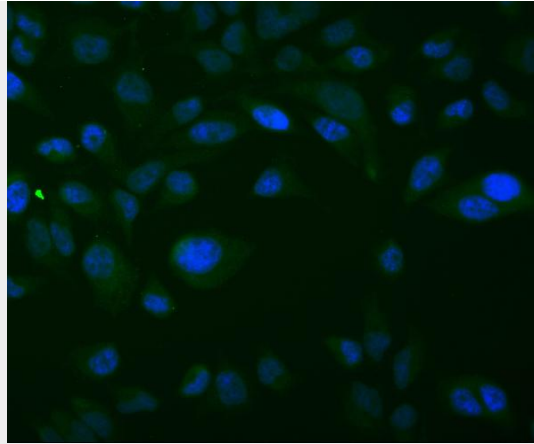


Figure 2. IF analysis of Thioredoxin 2/TXN2 using anti-Thioredoxin 2/TXN2 antibody (M04586-2). Thioredoxin 2/TXN2 was detected in immunocytochemical section of HeLa cells. Enzyme antigen retrieval was performed using IHC enzyme antigen retrieval reagent (AR0022) for 15 mins. The cells were blocked with 10% goat serum. And then incubated with 2  $\mu$ g/mL mouse anti-Thioredoxin 2/TXN2 Antibody (M04586-2) overnight at 4°C. DyLight®488 Conjugated Goat Anti-mouse IgG (BA1126) was used as secondary antibody at 1:100 dilution and incubated for 30 minutes at 37°C. The section was counterstained with DAPI. Visualize using a fluorescence microscope and filter sets appropriate for the label used.

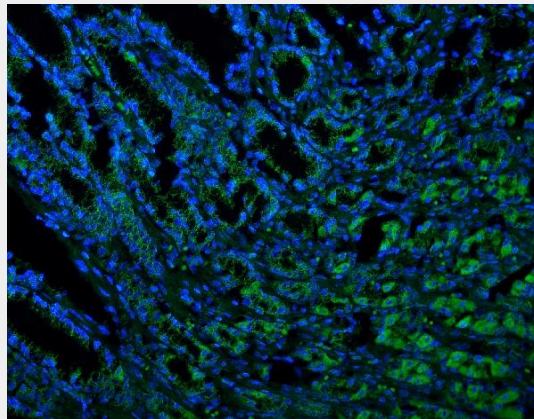


Figure 3. IF analysis of Thioredoxin 2/TXN2 using anti-Thioredoxin 2/TXN2 antibody (M04586-2). Thioredoxin 2/TXN2 was detected in paraffin-embedded section of human intestinal cancer tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 2  $\mu$ g/mL mouse anti-Thioredoxin 2/TXN2 Antibody (M04586-2) overnight at 4°C. DyLight®488 Conjugated Goat Anti-Mouse IgG (BA1126) was used as secondary antibody at 1:100 dilution and incubated for 30 minutes at 37°C. The section was counterstained with DAPI. Visualize using a fluorescence microscope and filter sets appropriate for the label used.

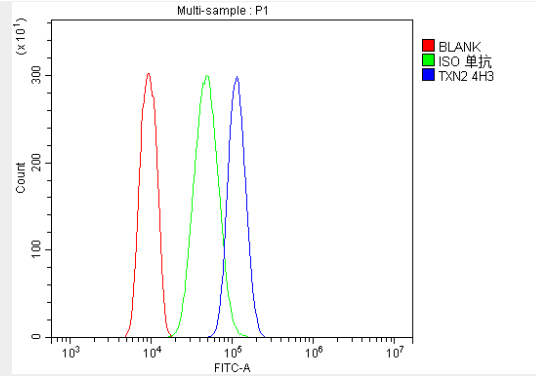


Figure 4. Flow Cytometry analysis of HL-60 cells using anti-Thioredoxin 2/TXN2 antibody (M04586-2). Overlay histogram showing HL-60 cells stained with M04586-2 (Blue line). The cells were blocked with 10% normal goat serum. And then incubated with mouse anti-Thioredoxin 2/TXN2 Antibody (M04586-2, 1 µg/1x10<sup>6</sup> cells) for 30 min at 20°C. DyLight®488 conjugated goat anti-mouse IgG (BA1126, 5-10 µg/1x10<sup>6</sup> cells) was used as secondary antibody for 30 minutes at 20°C. Isotype control antibody (Green line) was mouse IgG (1 µg/1x10<sup>6</sup>) used under the same conditions. Unlabelled sample (Red line) was also used as a control.

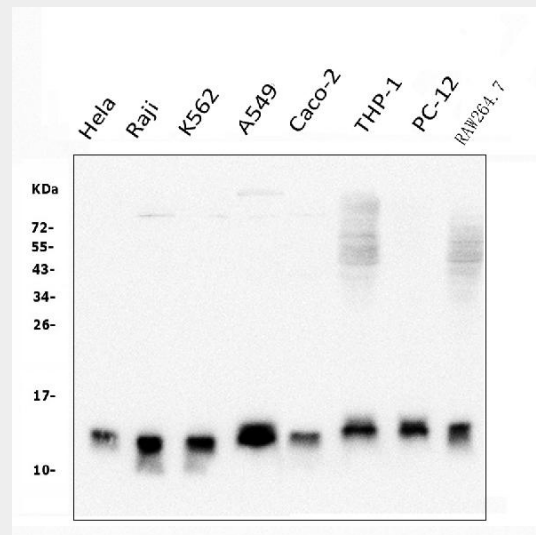


Figure 1. Western blot analysis of Thioredoxin 2/TXN2 using anti-Thioredoxin 2/TXN2 antibody (M04586-2). Electrophoresis was performed on a 5-20% SDS-PAGE gel at 70V (Stacking gel) / 90V (Resolving gel) for 2-3 hours. The sample well of each lane was loaded with 50µg of sample under reducing conditions.

- Lane 1: human HeLa whole cell lysates;
- Lane 2: human Raji whole cell lysates;
- Lane 3: human K562 whole cell lysates;
- Lane 4: human A549 whole cell lysates;
- Lane 5: human Caco-2 whole cell lysates;
- Lane 6: human THP-1 whole cell lysates;
- Lane 7: rat PC-12 whole cell lysates;
- Lane 8: mouse RAW264.7 whole cell lysates

After Electrophoresis, proteins were transferred to a Nitrocellulose membrane at 150mA for 50-90 minutes. Blocked the membrane with 5% Non-fat Milk/ TBS for 1.5 hour at RT. The membrane was incubated with mouse anti-Thioredoxin 2/TXN2 antigen affinity purified monoclonal antibody (Catalog # M04586-2) at 0.5 µg/mL overnight at 4°C, then washed with TBS-0.1%Tween 3 times with 5 minutes each and probed with a goat anti-mouse IgG-HRP

secondary antibody at a dilution of 1:10000 for 1.5 hour at RT. The signal is developed using an Enhanced Chemiluminescent detection (ECL) kit (Catalog # EK1001) with Tanon 5200 system. A specific band was detected for CTNNA1 at approximately 14KD. The expected band size for CTNNA1 is at 14KD.

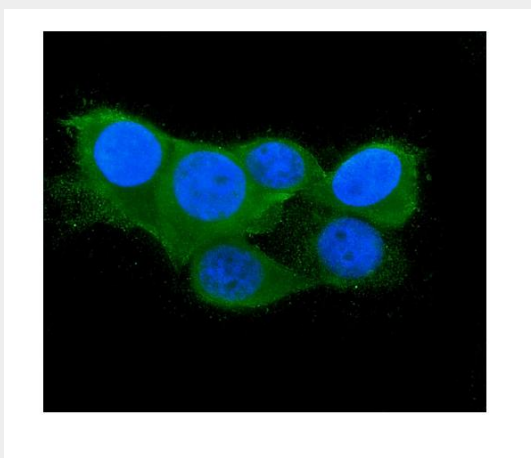


Figure 5. IF analysis of Thioredoxin 2/TXN2 using anti-Thioredoxin 2/TXN2 antibody (M04586-2). Thioredoxin 2/TXN2 was detected in immunocytochemical section of MCF7 cells. Enzyme antigen retrieval was performed using IHC enzyme antigen retrieval reagent (AR0022) for 15 mins. The cells were blocked with 10% goat serum. And then incubated with 2  $\mu$ g/mL mouse anti-Thioredoxin 2/TXN2 Antibody (M04586-2) overnight at 4°C. DyLight®488 Conjugated Goat Anti-mouse IgG (BA1126) was used as secondary antibody at 1:100 dilution and incubated for 30 minutes at 37°C. The section was counterstained with DAPI. Visualize using a fluorescence microscope and filter sets appropriate for the label used.

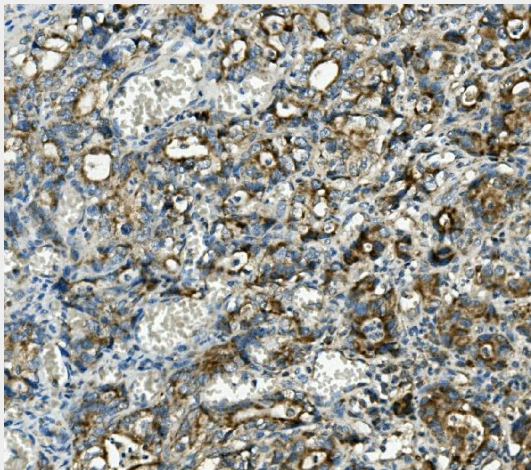


Figure 6. IHC analysis of Thioredoxin 2/TXN2 using anti-Thioredoxin 2/TXN2 antibody (M04586-2). Thioredoxin 2/TXN2 was detected in paraffin-embedded section of human gastric cancer tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 1  $\mu$ g/ml mouse anti-Thioredoxin 2/TXN2 Antibody (M04586-2) overnight at 4°C. Biotinylated goat anti-mouse IgG was used as secondary antibody and incubated for 30 minutes at 37°C. The tissue section was developed using Streptavidin-Biotin-Complex (SABC) (Catalog # SA1021) with DAB as the chromogen.

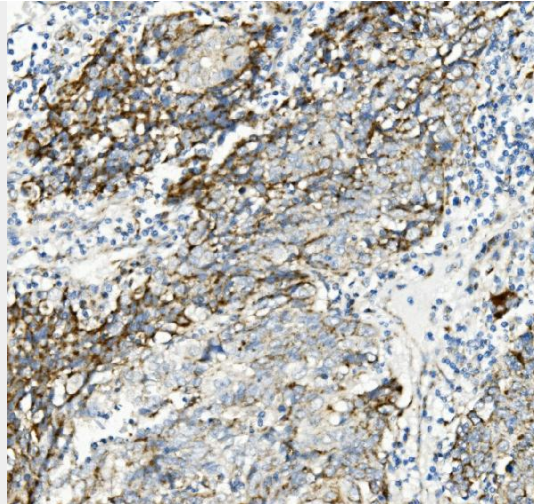


Figure 7. IHC analysis of Thioredoxin 2/TXN2 using anti-Thioredoxin 2/TXN2 antibody (M04586-2). Thioredoxin 2/TXN2 was detected in paraffin-embedded section of human lung cancer tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 1 µg/ml mouse anti-Thioredoxin 2/TXN2 Antibody (M04586-2) overnight at 4°C. Biotinylated goat anti-mouse IgG was used as secondary antibody and incubated for 30 minutes at 37°C. The tissue section was developed using Streptavidin-Biotin-Complex (SABC) (Catalog # SA1021) with DAB as the chromogen.

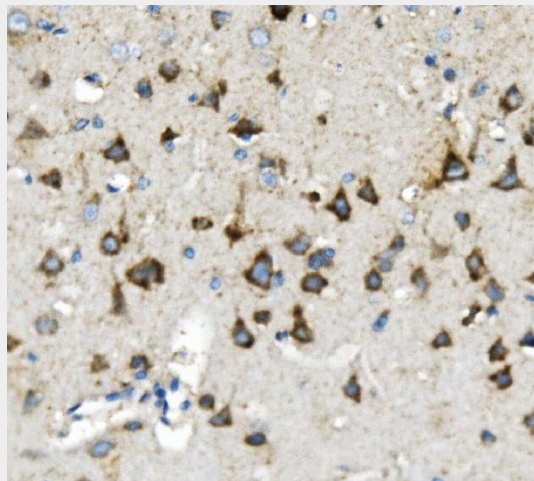


Figure 8. IHC analysis of Thioredoxin 2/TXN2 using anti-Thioredoxin 2/TXN2 antibody (M04586-2). Thioredoxin 2/TXN2 was detected in paraffin-embedded section of rat brain tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 1 µg/ml mouse anti-Thioredoxin 2/TXN2 Antibody (M04586-2) overnight at 4°C. Biotinylated goat anti-mouse IgG was used as secondary antibody and incubated for 30 minutes at 37°C. The tissue section was developed using Streptavidin-Biotin-Complex (SABC) (Catalog # SA1021) with DAB as the chromogen.

#### **Anti-Thioredoxin 2/TXN2 Antibody Picoband™ (monoclonal, 4H3) - Background**

Thioredoxin, mitochondrial also known as thioredoxin-2 is a protein that in humans is encoded by the TXN2 gene on chromosome 22. It is mapped to 22q12.3. This nuclear gene encodes a mitochondrial member of the thioredoxin family, a group of small multifunctional redox-active proteins. The encoded protein may play important roles in the regulation of the mitochondrial membrane potential and in protection against oxidant-induced apoptosis.