abcam

ab248516

Anti-Peroxiredoxin 2/PRP antibody [EPR5155] - BSA and Azide free

Recombinant | RabMAb | KO Validated

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	EPR5155
Purification technique	Affinity purification Protein A
Concentration	1.078 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

ICC/IF

Tested

Species	Human
Dilution info	-

Notes	-

Expected

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

Predicted

Species	Rat
Dilution info	-
Notes	-

WB

Tested

Species	Human
Dilution info	-
Notes	-

Expected

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

Predicted

Species	Rat
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
Notes	-

Expected

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

Predicted

Species	Rat
Dilution info	-
Notes	-

IHC-P

Not recommended

Species	Mouse, Human, Rat
Dilution info	-
Notes	-

Target data

See full target information PRDX2

Function Thiol-specific peroxidase that catalyzes the reduction of hydrogen peroxide and organic hydroperoxides to water and alcohols, respectively. Plays a role in cell protection against oxidative stress by detoxifying peroxides and as sensor of hydrogen peroxide-mediated signaling events. Might participate in the signaling cascades of growth factors and tumor necrosis factor-alpha by regulating the intracellular concentrations of H(2)O(2).

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

ab248516 is the carrier-free version of ab133481.

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	Peroxiredoxin 2 (also known as PRP or PRDX2) is an antioxidant enzyme that plays an important role in reducing peroxides and protecting cells from oxidative damage. The target consisting of approximately 22kDa mass is expressed heavily in erythrocytes but can also be found in other tissues like the heart and liver. PRDX2 belongs to the peroxiredoxin family and its redox activity contributes significantly to cellular homeostasis and defense against oxidative stress.

Biological function summary	Peroxiredoxins like PRDX2 function by breaking down hydrogen peroxide and organic hydroperoxides safeguarding cells from oxidative harm. PRDX2 often forms homodimers or higher-order oligomers which influence its catalytic efficiency and chaperone activity. Within the cell it not only acts independently but also associates with other cellular components reflecting its participation in important cellular processes including cell proliferation and apoptosis.
Pathways	PRDX2 engages significantly within antioxidant defense systems specifically the thioredoxin pathway. It interacts with thioredoxin reductase and thioredoxin to facilitate the reduction of peroxides maintaining the cell's redox balance. Furthermore PRDX2 intersects with cellular signaling pathways associated with inflammation and the regulation of cell death where proteins like NRF2 and KEAP1 play important roles in managing oxidant-inducible gene expression.
Associated diseases and disorders	Disruptions in PRDX2 function connect to conditions like cancer and cardiovascular diseases. In cancer altered peroxiredoxin 2 expression correlates to tumor progression and resistance to chemotherapy implicating its interaction with proteins like NF-κB in enhancing cell survival. In cardiovascular diseases oxidative stress mediated by PRDX2 imbalance can lead to myocardial infarction and heart failure linking it to proteins such as SOD2 involved in mitochondrial defense.

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

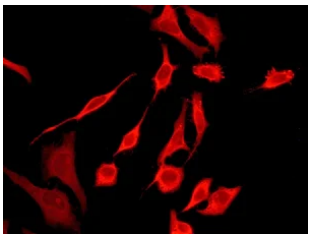
We do not recommend this combination. It is not covered by our product promise.

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.

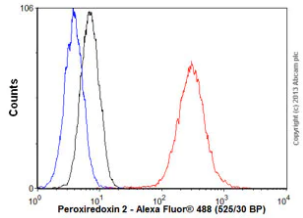
7 product images



Immunocytochemistry/ Immunofluorescence - Anti-Peroxiredoxin 2/PRP antibody [EPR5155] - BSA and Azide free (ab248516)

Peroxiredoxin 2/PRP Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-Peroxiredoxin 2/PRP antibody

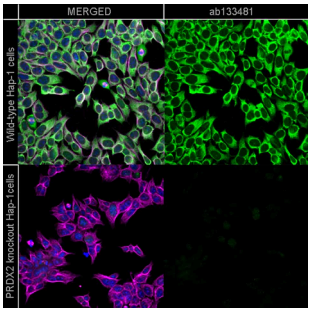
This data was developed using ab133481, the same antibody clone in a different buffer formulation.
Immunofluorescence analysis of HeLa cells labelling Peroxiredoxin 2/PRP with ab133481 at 1/100 dilution.



Flow Cytometry (Intracellular) - Anti-Peroxiredoxin 2/PRP antibody [EPR5155] - BSA and Azide free (ab248516)

Peroxiredoxin 2/PRP Flow Cytometry (Intracellular) staining using rabbit Anti-Peroxiredoxin 2/PRP antibody

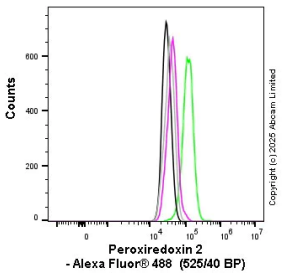
This data was developed using ab133481, the same antibody clone in a different buffer formulation.Overlay histogram showing HeLa cells stained with ab133481 (red line). The cells were fixed with 80% methanol (5 min) and then permeabilized with 0.1% PBS-Tween for 20 min. The cells were then incubated in 1x PBS / 10% normal goat serum / 0.3M glycine to block non-specific protein-protein interactions followed by the antibody (ab133481, 1/1000 dilution) for 30 min at 22°C. The secondary antibody used was Alexa Fluor® 488 goat anti-rabbit IgG (H&L) (ab150077) at 1/2000 dilution for 30 min at 22°C. Isotype control antibody (black line) was rabbit IgG (monoclonal) (0.1µg/1x10^6 cells) used under the same conditions. Unlabelled sample (blue line) was also used as a control. Acquisition of >5,000 events were collected using a 20mW Argon ion laser (488nm) and 525/30 bandpass filter.



Immunocytochemistry/ Immunofluorescence - Anti-Peroxiredoxin 2/PRP antibody [EPR5155] - BSA and Azide free (ab248516)

Peroxiredoxin 2/PRP Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-Peroxiredoxin 2/PRP antibody

Immunofluorescent analysis of 100% methanol-fixed-fixed 0.1% Triton X-100 permeabilized Hap1 WT and Hap1-PRDX2 KO cells labelling Peroxiredoxin 2 with ab133481 at 0.2 µg/ml concentration followed by ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed antibody at 1/1000 (2 µg/ml dilution (Green). Image showing cytoplasmic staining in Hap1 WT cell line. ab7291 Anti-alpha Tubulin antibody [DM1A] was used to counterstain tubulin at 1/1000 dilution (Magenta). The nuclear counterstain was DAPI (Blue).



Flow Cytometry (Intracellular) - Anti-Peroxiredoxin 2/PRP antibody [EPR5155] - BSA and Azide free (ab248516)

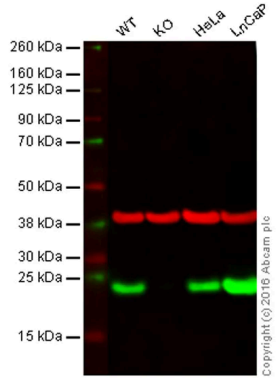
Peroxiredoxin 2/PRP Flow Cytometry (Intracellular) staining using rabbit Anti-Peroxiredoxin 2/PRP antibody

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab133481).
Flow cytometry overlay histogram showing wild-type HAP1 (green line) and PRDX2 knockout HAP1 stained with ab133481 (magenta line). The cells were fixed with 80% methanol (5 min) and then permeabilised with 0.1% PBS-Triton X-100 for 15 min. The cells were then incubated in 1x PBS containing 10% normal goat serum to block non-specific protein-protein interaction followed by the antibody (ab133481) (1x 10^6 in 100µl at 0.008 µg/ml (1/14375 dilution)) for 30min at 22°C.

The secondary antibody Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed was incubated at 1/4000 dilution for 30min at 22°C.

Isotype control antibody was Recombinant Rabbit IgG, monoclonal [EPR25A] - Isotype Control in HAP1 WT cells (black line) and HAP1-PRDX2 KO cells (grey line), used at the same concentration and conditions as the primary antibody.

Acquisition of >5000 events were collected using a 50 mW Blue laser (488nm) and 525/40 bandpass filter.



Western blot - Anti-Peroxiredoxin 2/PRP antibody [EPR5155] - BSA and Azide free (ab248516)

Peroxiredoxin 2/PRP Western blot staining using rabbit Anti-Peroxiredoxin 2/PRP antibody

This data was developed using ab133481, the same antibody clone in a different buffer formulation.
Lane 1: Wild-type HAP1 cell lysate (20 µg)

Lane 2: Peroxiredoxin 2/PRP knockout HAP1 cell lysate (20 µg)

Lane 3: HeLa cell lysate (20 µg)

Lane 4: LnCaP cell lysate (20 µg)

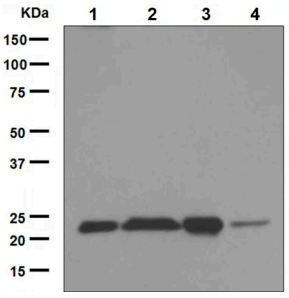
Lanes 1 - 4: Merged signal (red and green). Green - ab133481 observed at 24 kDa. Red - loading control, ab8245, observed at 37 kDa.

ab133481 was shown to specifically react with Peroxiredoxin 2/PRP when Peroxiredoxin 2/PRP knockout samples were used. Wild-type and Peroxiredoxin 2/PRP knockout samples were subjected to SDS-PAGE. ab133481 and ab8245 (loading control to GAPDH) were diluted 1/50 000 and 1/10 000 respectively and incubated overnight at 4°C. Blots were developed with Goat anti-Rabbit IgG H&L (IRDye® 800CW) preadsorbed (ab216773)

and Goat anti-Mouse IgG H&L (IRDye® 680RD) preadsorbed (ab216776) secondary antibodies at 1/10000 dilution for 1 h at room temperature before imaging.

All lanes:
Western blot - Anti-Peroxiredoxin 2/PRP antibody [EPR5155] (ab133481)

Predicted band size: 22 kDa



Western blot - Anti-Peroxiredoxin 2/PRP antibody [EPR5155] - BSA and Azide free (ab248516)

Peroxiredoxin 2/PRP Western blot staining using rabbit Anti-Peroxiredoxin 2/PRP antibody

This data was developed using ab133481, the same antibody clone in a different buffer formulation.
All lanes:
Western blot - Anti-Peroxiredoxin 2/PRP antibody [EPR5155] (ab133481) at 1/50000 dilution

Lane 1:
293T cell lysate at 10 µg

Lane 2:
HepG2 cell lysate at 10 µg

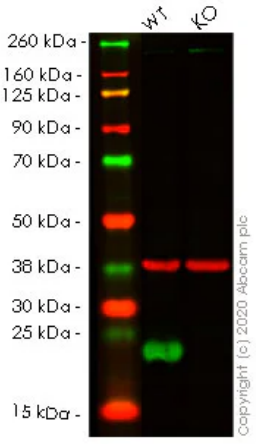
Lane 3:
LnCaP cell lysate at 10 µg

Lane 4:
U937 cell lysate at 10 µg

Secondary

All lanes:
HRP labelled goat anti-rabbit at 1/2000 dilution

Predicted band size: 22 kDa



Western blot - Anti-Peroxiredoxin 2/PRP antibody [EPR5155] - BSA and Azide free (ab248516)

Peroxiredoxin 2/PRP Western blot staining using rabbit Anti-Peroxiredoxin 2/PRP antibody

This data was developed using the same antibody clone in a different buffer formulation (ab133481).
Lanes 1- 2: Merged signal (red and green). Green - ab133481 observed at 22 kDa. Red - Anti-GAPDH antibody [6C5] - Loading Control (ab8245) observed at 37 kDa.

ab133481 was shown to react with Peroxiredoxin 2/PRP in wild-type HEK-293T cells in western blot. Loss of signal was observed when knockout cell line ab266392 (knockout cell lysate ab257041) was used. Wild-type HEK-293T and PRDX2 knockout HEK-293T cell lysates were subjected to SDS-PAGE. Membrane was blocked for 1 hour at room temperature in 0.1% TBST with 3% non-fat dried milk. ab133481 and Anti-GAPDH antibody [6C5] - Loading Control (ab8245) overnight at 4°C at a 1 in 5000 dilution and a 1 in 20000 dilution respectively. Blots were developed with Goat anti-Rabbit IgG H&L (IRDye®800CW) preadsorbed (ab216773) and Goat anti-Mouse IgG H&L (IRDye®680RD) preadsorbed (ab216776) secondary antibodies at 1 in 20000 dilution for 1 hour at room temperature before imaging.

All lanes:
Western blot - Anti-Peroxiredoxin 2/PRP antibody [EPR5155] (ab133481) at 1/5000 dilution

Lane 1:
Wild-type HEK-293T cell lysate at 20 µg

Lane 2:
Western blot - Human PRDX2 (Peroxiredoxin 2/PRP) knockout HEK-293T cell lysate (ab257041) at 20 µg

Performed under reducing conditions.

Predicted band size: 22 kDa

Observed band size: 22 kDa

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