abcam

ab244234

Anti-Glutathione Reductase antibody [EPR7237] - 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	EPR7237
Purification technique	Affinity purification Protein A

Reactivity data

ICC/IF

Tested

Species	Human
Dilution info	-
Notes	-

WB

Tested

Species	Human
Dilution info	-
Notes	-

IHC-P

Not recommended

Species	Human
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
Notes	-

Target data

See full target information GSR

Function	Catalyzes the reduction of glutathione disulfide (GSSG) to reduced glutathione (GSH). Constitutes the major mechanism to maintain a high GSH:GSSG ratio in the cytosol.

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

ab244234 is the carrier-free version of ab128933.

Species reactivity

Mouse, Rat: We have preliminary internal testing data to indicate this antibody may not react with these species. Please contact us for more information.

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	Glutathione reductase also known as GSR is an enzyme that plays a mechanical role in maintaining the redox balance within cells. This enzyme reduces glutathione disulfide (GSSG) to the sulfhydryl form GSH which is essential for detoxifying reactive oxygen species. Glutathione reductase has a molecular weight of approximately 55 kDa. It is widely expressed in various tissues including the liver where it participates in detoxification processes. The enzyme operates in the cytosol and mitochondria reflecting its necessity across different cellular compartments.
Biological function summary	The enzyme sustains a supply of reduced glutathione which is important for antioxidant defense and cellular protection against oxidative stress. As a critical

	player in the glutathione system it is not part of a larger complex but interacts significantly within the cellular antioxidant framework. It supports important functions like protein folding and DNA synthesis by keeping the cellular redox environment stable. The enzyme's activity ensures that glutathione an important antioxidant with a molecular weight of 307.32 Da remains in its active form to fulfill its protective roles.
Pathways	The enzyme is deeply integrated into the pentose phosphate pathway which generates NADPH necessary for the reduction of glutathione disulfide. It also connects to the glutathione metabolism pathway where it maintains homeostasis through GSH regeneration. Glutathione reductase intersects with other proteins like glutathione peroxidase (GPx) which uses GSH to reduce hydrogen peroxide displaying a coordinated effort in mitigating oxidative damage.
Associated diseases and disorders	Deficiency or dysfunction of this enzyme links to conditions such as hemolytic anemia where reduced enzyme activity leads to higher susceptibility to oxidative damage in red blood cells. Additionally its dysfunction associates with neurodegenerative disorders where oxidative stress plays a critical role. The enzyme's function relates to proteins like superoxide dismutase (SOD) in disease pathways where both contribute to managing oxidative stress. Understanding alterations in glutathione reductase activity may offer insights into therapeutic strategies for these oxidative stress-related conditions.

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

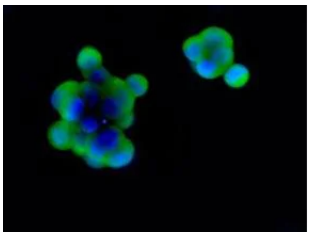
We do not recommend this combination. It is not covered by our product promise.

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.

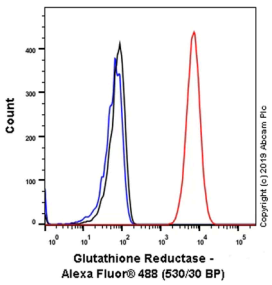
4 product images



Immunocytochemistry/ Immunofluorescence - Anti-Glutathione Reductase antibody [EPR7237] - BSA and Azide free (ab244234)

Glutathione Reductase Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-Glutathione Reductase antibody

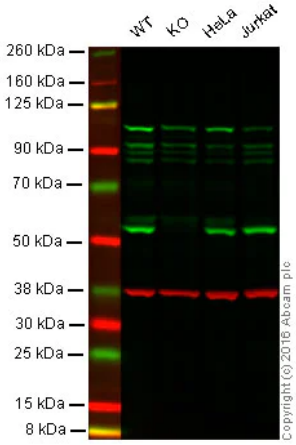
This data was developed using ab128933, the same antibody clone in a different buffer formulation.ab128933, at a 1/100 dilution, staining Human Glutathione Reductase in HeLa cells, by Immunofluorescence.



Flow Cytometry (Intracellular) - Anti-Glutathione Reductase antibody [EPR7237] - BSA and Azide free (ab244234)

Glutathione Reductase Flow Cytometry (Intracellular) staining using rabbit Anti-Glutathione Reductase antibody

This data was developed using ab128933, the same antibody clone in a different buffer formulation.
Flow Cytometry analysis of HeLa (Human cervix adenocarcinoma epithelial cell) cells labeling Glutathione Reductase with purified ab128933 at 1/100 dilution (10 µg/mL) (Red). Cells were fixed with 4% Paraformaldehyde and permeabilised with 90% Methanol. A Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) secondary antibody was used at 1/2000. Isotype control - Rabbit monoclonal IgG (Black). Unlabeled control - Cells without incubation with primary antibody and secondary antibody (Blue).



Western blot - Anti-Glutathione Reductase antibody [EPR7237] - BSA and Azide free (ab244234)

Glutathione Reductase Western blot staining using rabbit Anti-Glutathione Reductase antibody

This data was developed using ab128933, the same antibody clone in a different buffer formulation.
Lane 1: Wild-type HAP1 cell lysate (20 µg)

Lane 2: Glutathione Reductase knockout HAP1 cell lysate (20 µg)

Lane 3: HeLa cell lysate (20 µg)

Lane 4: Jurkat cell lysate (20 µg)

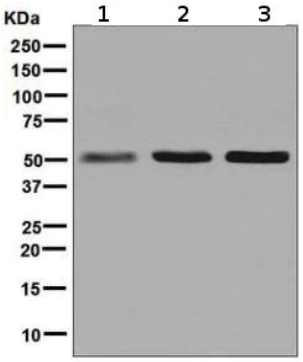
Lanes 1 - 4: Merged signal (red and green). Green - ab128933 observed at 55 kDa. Red - loading control, ab8245, observed at 37 kDa.

ab128933 was shown to specifically react with Glutathione Reductase when Glutathione Reductase knockout samples were used, along with additional cross-reactive bands. Wild-type and Glutathione Reductase knockout samples were subjected to SDS-PAGE. ab128933 and ab8245 (loading control to GAPDH) were diluted at 1/10000 and 1/10,000 dilution 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 1/10,000 dilution for 1 hour at room temperature before imaging.

All lanes:

Western blot - Anti-Glutathione Reductase antibody [EPR7237] (ab128933)

Predicted band size: 56 kDa



Western blot - Anti-Glutathione Reductase antibody [EPR7237] - BSA and Azide free (ab244234)

This data was developed using ab128933, the same antibody clone in a different buffer formulation.
All lanes:
Western blot - Anti-Glutathione Reductase antibody [EPR7237] (ab128933) at 1/10000 dilution

Lane 1:
Caco-2 cell lysate at 10 µg

Lane 2:
A549 cell lysate at 10 µg

Lane 3:
HeLa cell lysate at 10 µg

Secondary

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

Predicted band size: 56 kDa

Observed band size: 50 kDa

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