abcam

ab137098

Anti-GLO1 antibody [EPR8878]

Recombinant | RabMAb | KO Validated

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	EPR8878
Purification technique	Affinity purification Protein A

Reactivity data

IP

Not recommended

Species	Mouse, Human, Rat
Dilution info	-
Notes	-

WB

Tested

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

Expected

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

Predicted

Species	Rat
Dilution info	-
Notes	-

IHC-P

Not recommended

Species	Mouse, Human, Rat
Dilution info	-
Notes	-

ICC/IF

Not recommended

Species	Mouse, Human, Rat
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human

Dilution info	1/10 - 1/100
Notes	ab172730 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody.

Expected

Species	Mouse
Dilution info	1/10 - 1/100
Notes	ab172730 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody.

Predicted

Species	Rat
Dilution info	-
Notes	-

Target data

See full target information GLO1

Function	Catalyzes the conversion of hemimercaptal, formed from methylglyoxal and glutathione, to S-lactoylglutathione (PubMed:20454679, PubMed:23122816, PubMed:9705294). Involved in the regulation of TNF-induced transcriptional activity of NF-kappa-B (PubMed:19199007). Required for normal osteoclastogenesis (By similarity).

Storage

Shipped at conditions	Conditional Ambient
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C

Notes

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	The GLO1 protein also known as glyoxalase I plays an important role in cellular metabolism by detoxifying methylglyoxal a byproduct of glycolysis. It catalyzes the conversion of methylglyoxal into S-D-lactoylglutathione using glutathione as a cofactor. This enzyme has a mass of approximately 29 kDa and is expressed in various tissues throughout the body with higher levels found in the liver and kidney. Glyoxalase I (GLO1) expression is increased in response to stress conditions indicating its role in cellular defense mechanisms.
Biological function summary	Glyoxalase I is important for maintaining cellular homeostasis by mitigating harmful compounds. It forms part of the glyoxalase system which includes glyoxalase II functioning downstream of GLO1. This system prevents the accumulation of advanced glycation end-products (AGEs) which are implicated in cellular aging and dysfunction. By reducing the levels of methylglyoxal GLO1 supports normal physiological processes and protects cellular integrity.
Pathways	Glyoxalase I is an important component of the glyoxalase pathway. This pathway integrates into the detoxification network working alongside other important enzymes such as superoxide dismutase and catalase. These relationships highlight its function in cellular oxidative stress responses. GLO1's activity impacts pathways related to glycolysis and overall energy metabolism due to its role in reducing metabolic byproducts.
Associated diseases and disorders	GLO1 has significant implications in diabetic complications and cancer. In diabetes increased methylglyoxal can worsen tissue damage making GLO1's role protective against advanced glycation end-product formation. In cancer GLO1 is overexpressed contributing to cellular proliferation and survival. Its interaction with proteins such as Hsp70 in cancer illustrates the adaptive mechanisms that tumor cells use for progression and chemoresistance.

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

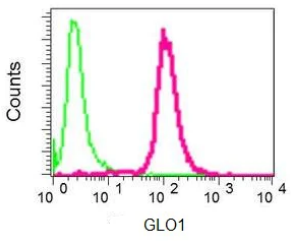
We do not recommend this combination. It is not covered by our product promise.

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.

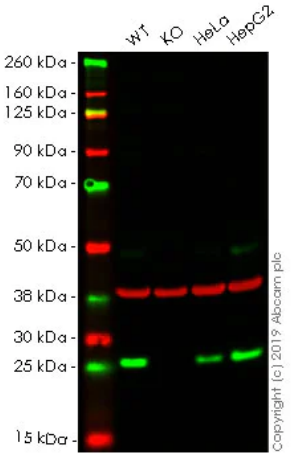
3 product images



Flow Cytometry (Intracellular) - Anti-GLO1 antibody [EPR8878] (ab137098)

GLO1 Flow Cytometry (Intracellular) staining using rabbit Anti-GLO1 antibody

Intracellular flow cytometric analysis of permeabilized Molt-4 cells labelling GLO1 with ab137098 at 1/10 dilution (red). Negative Rabbit IgG shown in green.



Western blot - Anti-GLO1 antibody [EPR8878] (ab137098)

GLO1 Western blot staining using rabbit Anti-GLO1 antibody

Lanes 1 - 4: Merged signal (red and green). Green - ab137098 observed at 21 kDa. Red - loading control, ab8245, observed at 37 kDa.
ab137098 was shown to specifically react with in wild-type HAP1 cells as signal was lost in GLO1 knockout cells. Wild-type and GLO1 knockout samples were subjected to SDS-PAGE. The membrane was blocked with 3% Milk. ab137098 and ab8245 (Mouse anti-GAPDH loading control) were incubated overnight at 4°C at 1/1000 dilution and 1/20000 dilution respectively. Blots were developed with Goat anti-Rabbit IgG H&L (IRDye® 800CW) preabsorbed ab216773 and Goat anti-Mouse IgG H&L (IRDye® 680RD) preabsorbed ab216776 secondary antibodies at 1/20000 dilution for 1 hour at room temperature before imaging.

All lanes:
Western blot - Anti-GLO1 antibody [EPR8878] (ab137098) at 1/1000 dilution

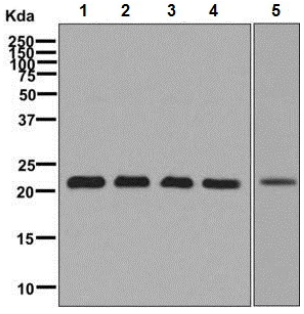
Lane 1:
Wild-type HAP1 whole cell lysate at 20 µg

Lane 2:
GLO1 knockout HAP1 whole cell lysate at 20 µg

Lane 3:
HeLa whole cell lysate at 20 µg

Lane 4:
HepG2 whole cell lysate at 20 µg

Predicted band size: 21 kDa



Western blot - Anti-GLO1 antibody [EPR8878] (ab137098)

All lanes:
Western blot - Anti-GLO1 antibody [EPR8878] (ab137098) at 1/1000 dilution

Lane 1:
Molt-4 cell lysate at 10 µg

Lane 2:
Raji cell lysate at 10 µg

Lane 3:
TF-1 cell lysate at 10 µg

Lane 4:
HeLa cell lysate at 10 µg

Lane 5:
Red blood cell lysate at 10 µg

Secondary

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

Predicted band size: 21 kDa

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