abcam

ab124738

Anti-Glucose 6 Phosphate Dehydrogenase antibody [EPR6291]

Recombinant | RabMAb

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	EPR6291
Purification technique	Affinity purification Protein A
Concentration	0.128 - 0.129 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

ICC/IF

Not recommended

Species	Human, Mouse
Dilution info	-
Notes	-

IP

Not recommended

Species	Human, Mouse
Dilution info	-
Notes	-

WB

Tested

Species	Human
Dilution info	1/10000 - 1/50000
Notes	-

Predicted

Species	Mouse
Dilution info	-
Notes	-

IHC-P

Not recommended

Species	Human, Mouse
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.

Predicted

Species	Mouse
Dilution info	-
Notes	-

Target data

See full target information Glucose-6-phosphate 1-dehydrogenase

Function	Catalyzes the rate-limiting step of the oxidative pentose-phosphate pathway, which represents a route for the dissimilation of carbohydrates besides glycolysis. The main function of this enzyme is to provide reducing power (NADPH) and pentose phosphates for fatty acid and nucleic acid synthesis. Also catalyzes the conversion of NAADPH, which is produced by enzymes such as DUOX1, DUOX2 and NOX5 from NAADP and promotes Ca(2+) signaling during T cell activation, back to NAADP (PubMed:34784249).

Storage

Shipped at conditions	Conditional Ambient
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Storage information	Stable for 12 months at -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.

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

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	Glucose 6 Phosphate Dehydrogenase also known as G6PD or G6P dehydrogenase plays an important role in the pentose phosphate pathway catalyzing the conversion of glucose 6-phosphate to 6-phosphoglucono-δ-lactone while producing NADPH from NADP+. G6PD with a molecular mass of approximately 59 kDa is expressed in various tissues with high levels found in red blood cells liver and adrenal glands. This enzyme is vital for protecting cells from oxidative damage by supplying reductive capacity.
Biological function summary	Glucose 6-phosphate dehydrogenase is essential for maintaining cellular redox balance especially in cells lacking mitochondria like red blood cells. It functions as part of a monomer which can dimerize depending on the cellular needs and conditions. The activity of G6PD directly affects the production of NADPH which is necessary for the biosynthesis of nucleic acids and lipids and for maintaining reduced glutathione levels therefore sustaining the antioxidant capacity of the cell.
Pathways	Glucose 6-phosphate dehydrogenase is a pivotal enzyme in the oxidative phase of the pentose phosphate pathway which provides ribose 5-phosphate for nucleotide synthesis and NADPH for reductive biosynthetic reactions. G6PD connects with other enzymes in the pathway such as 6-phosphogluconate dehydrogenase contributing to the regulation of cellular metabolic needs. Its function is tightly linked to glucose metabolism and indirectly influences glycolytic processes.
Associated diseases and disorders	Alterations in glucose 6-phosphate dehydrogenase activity lead to conditions such as G6PD deficiency which can cause hemolytic anemia when individuals are exposed to certain drugs infections or foods. This enzyme's deficiency is one of the most common enzymatic disorders in humans and is triggered by genetic mutations affecting G6PD function. Moreover G6PD has implications in cancer biology as its activity influences the proliferation and survival of cancer cells alongside other proteins like TP53 and NF-κB which are involved in cellular stress responses.

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

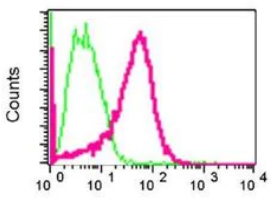
We do not recommend this combination. It is not covered by our product promise.

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.

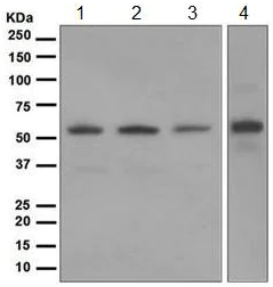
2 product images



Flow Cytometry (Intracellular) - Anti-Glucose 6 Phosphate Dehydrogenase antibody [EPR6291] (ab124738)

Glucose 6 Phosphate Dehydrogenase Flow Cytometry (Intracellular) staining using rabbit Anti-Glucose 6 Phosphate Dehydrogenase antibody

ab124738 at 1/10 dilution staining Glucose 6 Phosphate Dehydrogenase in permeablized HeLa cells (red) or a rabbit IgG (negative) (green).



Western blot - Anti-Glucose 6 Phosphate Dehydrogenase antibody [EPR6291] (ab124738)

All lanes:
Western blot - Anti-Glucose 6 Phosphate Dehydrogenase antibody [EPR6291] (ab124738) at 1/10000 dilution

Lane 1:
293T cell lysate at 10 µg

Lane 2:
MOLT4 cell lysate at 10 µg

Lane 3:
HUVEC cell lysate at 10 µg

Lane 4:
HeLa cell lysate at 10 µg

Secondary

All lanes:

Goat anti-Rabbit HRP at 1/2000 dilution

Predicted band size: 59 kDa

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