abcam

ab129199

Anti-PGD antibody [EPR6565]

Recombinant | RabMAb | 20ul selling size

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	EPR6565
Purification technique	Affinity purification Protein A
Dissociation constant	4.53×10^{-11} M
Concentration	0.138 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

WB

Tested

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

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

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

IHC-P

Not recommended

Species	Mouse, Rat, Human
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	1/250 - 1/500
Notes	-

Expected

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

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/100 - 1/1000

Notes	ab172730 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody.

Expected

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

Target data

See full target information PGD

Function	Catalyzes the oxidative decarboxylation of 6-phosphogluconate to ribulose 5-phosphate and CO(2), with concomitant reduction of NADP to NADPH.

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.

Supplementary info

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

Activity summary	PGD also known as 6-phosphogluconate dehydrogenase is an enzyme with a mass of approximately 53 kDa. It plays an important role in catalyzing the oxidative decarboxylation of 6-phosphogluconate to ribulose 5-phosphate producing NADPH in the process. PGD expression occurs in various tissues with notably high levels in liver and red blood cells (RBCs). Alternative names include 6PGD and phosphogluconate dehydrogenase with its corresponding gene expressed across eukaryotic organisms.
Biological function summary	The enzyme 6-phosphogluconate dehydrogenase is essential in cellular metabolism and redox homeostasis. It functions as part of the pentose phosphate pathway a metabolic route critical for the generation of NADPH and ribose 5-phosphate. NADPH is necessary for biosynthetic reactions and in protecting cells against oxidative stress. 6PGD operates as a homodimer and is not part of a larger protein complex enabling it to perform its functions independently within the cell.
Pathways	PGD stands as a major component of the pentose phosphate pathway alongside glucose-6-phosphate dehydrogenase (G6PD). This pathway is significant for providing reducing power and pentose phosphates for anabolic reactions. Both 6-phosphogluconate and G6PD assist in the proper functioning of this pathway facilitating the balance of NADP+/NADPH. The pathway intricately connects to glycolysis enabling the cells to adapt to fluctuations in metabolic demands through intermediates that interconvert between these pathways.
Associated diseases and disorders	Altered activity of 6-phosphogluconate dehydrogenase links to genetic disorders like hemolytic anemia. The pentose phosphate pathway's impairment particularly due to deficiency in PGD or its associated protein G6PD exacerbates anemia under oxidative stress. Additionally PGD overexpression has associations with many cancers as elevated NADPH production supports tumor survival and resistance. Understanding the role of PGD in these conditions helps in recognizing the importance of this enzyme in maintaining cellular health and adapting to disease challenges.

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

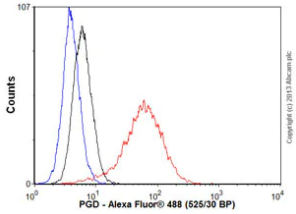
We do not recommend this combination. It is not covered by our product promise.

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.

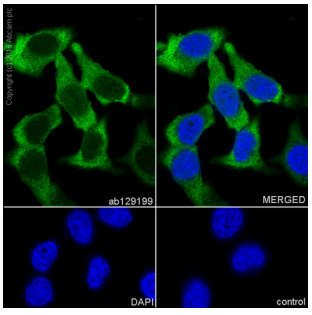
5 product images



Flow Cytometry (Intracellular) - Anti-PGD antibody [EPR6565] (ab129199)

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

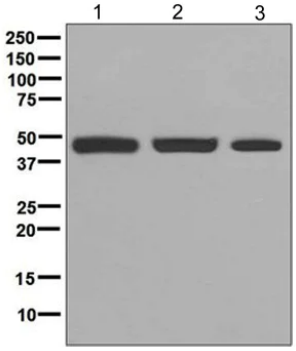
Overlay histogram showing HEK293 cells stained with ab129199 (red line). The cells were fixed with 4% paraformaldehyde (10 min) and then permeabilized with 0.1% PBS-Tween for 20 min. The cells were then incubated in 1x PBS / 10% normal goat serum / 0.3M glycine to block non-specific protein-protein interactions followed by the antibody (ab129199 1/1000 dilution) for 30 min at 22°C. The secondary antibody used was Alexa Fluorr® 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 >5000 events were collected using a 20mW Argon ion laser (488nm) and 525/30 bandpass filter. This antibody gave a positive signal in HEK293 cells fixed with 80% methanol (5 min)/permeabilized with 0.1% PBS-Tween for 20 min used under the same conditions.



Immunocytochemistry/ Immunofluorescence - Anti-PGD antibody [EPR6565] (ab129199)

PGD Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-PGD antibody

Immunocytochemistry/Immunofluorescence analysis of HeLa cells labelling PGD with ab129199 at 1/500. Cells were fixed with 100% methanol. ab150077 an Alexa Fluor® 488-conjugated goat anti-rabbit IgG (1/1000) was used as the secondary antibody.
Control: PBS only.
Nuclear counter stain: DAPI.



Western blot - Anti-PGD antibody [EPR6565] (ab129199)

PGD Western blot staining using rabbit Anti-PGD antibody

All lanes:
Western blot - Anti-PGD antibody [EPR6565] (ab129199) at 1/1000 dilution

Lane 1:
Raji cell lysate at 10 µg

Lane 2:
Molt-4 cell lysate at 10 µg

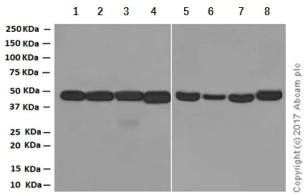
Lane 3:
293T (Human embryonic kidney epithelial cell) cell lysate at 10 µg

Secondary

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

Predicted band size: 53 kDa

Observed band size: 45 kDa



Western blot - Anti-PGD antibody [EPR6565] (ab129199)

Blocking and dilution buffer: 5% NFDM/TBST.
All lanes:
Western blot - Anti-PGD antibody [EPR6565] (ab129199) at 1/5000 dilution

Lane 1:
Mouse brain tissue lysates at 20 µg

Lane 2:
Mouse heart tissue lysates at 20 µg

Lane 3:
Mouse kidney tissue lysates at 20 µg

Lane 4:
Mouse spleen tissue lysates at 20 µg

Lane 5:
Rat brain tissue lysates at 20 µg

Lane 6:
Rat heart tissue lysates at 20 µg

Lane 7:
Rat kidney tissue lysates at 20 µg

Lane 8:
Rat spleen tissue lysates at 20 µg

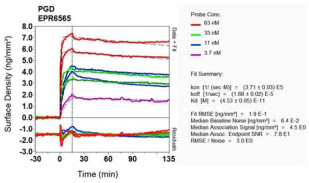
Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/20000 dilution

Predicted band size: 53 kDa

Observed band size: 45 kDa

Exposure time: 3min



OI-RD Scanning - Anti-PGD antibody [EPR6565] (ab129199)

We have systematically measured KD (the equilibrium dissociation constant between the antibody and its antigen), of more than 840 recombinant antibodies to assess not only their individual KD values but also to see the average affinity of antibody. Based on the comparison with published literature values for mouse monoclonal antibodies, Recombinant antibodies appear to be on average 1-2 order of magnitude higher affinity.

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