abcam

ab308449

Anti-PGAM5 antibody [EPR27145-82]

Recombinant | RabMAb | KO Validated | 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	EPR27145-82
Purification technique	Affinity purification Protein A
Concentration	0.53 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

ICC/IF

Tested

Species	Human
Dilution info	1/250
Notes	-

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/500
Notes	-

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

IP

Tested

Species	Human
Dilution info	1/30
Notes	-

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

IHC-P

Not recommended

Species	Human, Mouse, Rat
Dilution info	-
Notes	-

IHC-Fr

Not recommended

Species	Mouse, Rat, Human
Dilution info	-
Notes	-

Target data

See full target information PGAM5

Function

Mitochondrial serine/threonine phosphatase that dephosphorylates various substrates and thus plays a role in different biological processes including cellular senescence or mitophagy (PubMed:24746696, PubMed:32439975). Modulates cellular senescence by regulating mitochondrial dynamics. Mechanistically, participates in mitochondrial fission through dephosphorylating DNM1L/DRP1 (PubMed:32439975). Additionally, dephosphorylates MFN2 in a stress-sensitive manner and consequently protects it from ubiquitination and degradation to promote mitochondrial network formation (PubMed:37498743). Regulates mitophagy independent of PARKIN by interacting with and dephosphorylating FUNDC1, which interacts with LC3 (PubMed:24746696). Regulates anti-oxidative response by forming a tertiary complex with KEAP1 and NRF2 (PubMed:18387606). Regulates necroptosis by acting as a RIPK3 target and recruiting the RIPK1-RIPK3-MLKL necrosis 'attack' complex to mitochondria (PubMed:22265414).

Storage

Shipped at conditions	Conditional Ambient
Appropriate short-term storage duration	1-2 weeks
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C

Aliquoting information	Upon delivery aliquot
Storage information	Avoid freeze / thaw cycle

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	PGAM5 also known as Phosphoglycerate Mutase Family Member 5 is a mitochondrial protein with a known mass of around 32 kDa. It acts as a serine/threonine phosphatase without intrinsic catalytic phosphoglycerate mutase activity. PGAM5 localizes to the inner membrane of mitochondria and exhibits expression in tissues where metabolic regulation is significant. It plays a role in removing phosphate groups from target substrates influencing multiple cellular mechanisms.
Biological function summary	PGAM5 impacts pathways related to cellular stress responses and energy metabolism. It participates in programmed cell death and modulates mitochondrial dynamics. It can serve as part of a complex with other proteins adjusting the balance between mitophagy and apoptosis. Through interaction with key signaling molecules PGAM5 bridges various biochemical processes relevant to cell survival and energy utilization.
Pathways	Its function integrates into mitophagy and necroptosis. PGAM5 collaborates with proteins like PINK1 and PARKIN contributing to the clearance of damaged mitochondria via the mitophagy pathway. In necroptosis PGAM5 interacts with RIPK1 and RIPK3 regulating necrotic cell death. These interactions position PGAM5 at the crossroads of pathways critical to maintaining cellular homeostasis and response to stress.
Associated diseases and disorders	PGAM5 relates to neurodegenerative diseases and cancer. Mutations or dysregulation of PGAM5 connect to Parkinson's disease where impaired mitochondrial function and mitophagy play a role. In cancer altered PGAM5 activity may disrupt normal apoptotic processes leading to unchecked cell growth.

In these contexts PGAM5's interaction with proteins like PINK1 PARKIN RIPK1 and RIPK3 underpins its relevance to disease mechanisms.

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

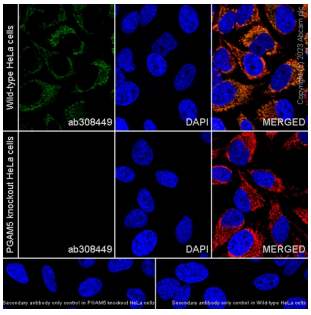
We do not recommend this combination. It is not covered by our product promise.

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.

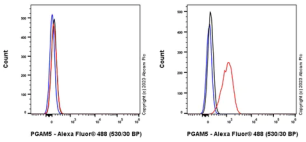
3 product images



Immunocytochemistry/ Immunofluorescence - Anti-PGAM5 antibody [EPR27145-82] (ab308449)

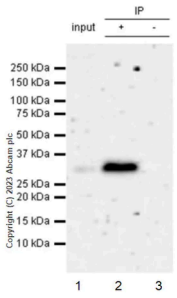
PGAM5 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-PGAM5 antibody

Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% TritonX-100 permeabilized PGAM5 KO HeLa (PGAM5 knockout human cervix adenocarcinoma epithelial cell) (ab265141) cells labelling PGAM5 with ab308449 at 1/250 (2.12 ug/ml) dilution, followed by ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed antibody at 1/1000 2 ug/ml dilution (Green). Confocal image showing mitochondrial staining in parental HeLa, and no staining in PGAM5 KO HeLa cell line. Image was taken with a confocal microscope(Leica-Microsystems, TCS SP8). anti-COX IV mouse monoclonal antibody - Mitochondrial Marker was used to counterstain tubulin at 1/1000 1ug/ml dilution (Red). The Nuclear counterstain was DAPI (Blue). Secondary antibody only control: Secondary antibody is ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed at 1/1000 2 ug/ml dilution.



Flow Cytometry (Intracellular) - Anti-PGAM5 antibody [EPR27145-82] (ab308449)

Flow cytometric analysis of 4% paraformaldehyde fixed 90% methanol permeabilized PGAM5 KO HeLa (PGAM5 knockout human cervix adenocarcinoma epithelial cell) (ab265141) (Left) / Parental HeLa (Right) cells labelling PGAM5 with ab308449 at 1/500 dilution (0.1 ug)/Red (Red) compared with a Rabbit monoclonal IgG (ab172730) (Black) isotype control and an unlabelled control (cells without incubation with primary antibody and secondary antibody) (Blue). A Goat Anti-Rabbit IgG (Alexa Fluor® 488, ab150081) at 1/5000 dilution was used as the secondary antibody.



Immunoprecipitation - Anti-PGAM5 antibody [EPR27145-82] (ab308449)

PGAM5 was immunoprecipitated from 0.35 mg HeLa (human cervical adenocarcinoma epithelial cell) whole cell lysate with ab308449 at 1/30 dilution (2ug in 0.35mg lysates). Western blot was performed on the immunoprecipitate using ab308449 at 1/1000 dilution. VeriBlot for IP secondary antibody (HRP) (ab131366) was used at 1/5000 dilution.
Lane 1: HeLa (human cervical adenocarcinoma epithelial cell) whole cell lysate
Lane 2: ab308449 IP in HeLa (human cervical adenocarcinoma epithelial cell) whole cell lysate
Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab308449 in HeLa whole cell lysate

Blocking and dilution buffer and concentration: 5% NFDM/TBST.

Exposure time: 180 seconds

All lanes:
Immunoprecipitation - Anti-PGAM5 antibody [EPR27145-82] (ab308449) at 1/1000 dilution

All lanes:
HeLa (human cervical adenocarcinoma epithelial cell) whole cell lysate at 10 µg

Secondary

All lanes:
Immunoprecipitation - VeriBlot for IP Detection Reagent (HRP) (ab131366) at 1/5000 dilution

Observed band size: 32 kDa

Exposure time: 180s

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