abcam

ab129165

Anti-IMPDH2 antibody [EPR8365(B)]

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	EPR8365(B)
Purification technique	Affinity purification Protein A
Specificity	The immunogen used to raise this antibody shares 86% homology with Human IMPDH1. Cross-reactivity with this protein has not been confirmed experimentally.
Dissociation constant	2.24 x 10^{-9} M
Concentration	0.099 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC-P

Tested

Species	Human

Dilution info	1/250 - 1/500
Notes	-

Predicted

Species	Mouse, Rat
Dilution info	-
Notes	-

IP

Not recommended

Species	Human, Mouse, Rat
Dilution info	-
Notes	-

WB

Tested

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

Predicted

Species	Mouse, Rat
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	1/250 - 1/500

Notes	-

Predicted

Species	Mouse, Rat
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/1000 - 1/10000
Notes	ab172730 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody.

Predicted

Species	Mouse, Rat
Dilution info	-
Notes	-

Target data

See full target information IMPDH2

Function	Catalyzes the conversion of inosine 5'-phosphate (IMP) to xanthosine 5'-phosphate (XMP), the first committed and rate-limiting step in the de novo synthesis of guanine nucleotides, and therefore plays an important role in the regulation of cell growth (PubMed:7763314, PubMed:7903306). Could also have a single-stranded nucleic acid-binding activity and could play a role in RNA and/or DNA metabolism (PubMed:14766016). It may also have a role in the development of malignancy and the growth progression of some tumors.

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	IMPDH2 also known as inosine monophosphate dehydrogenase 2 plays an important role in the de novo synthesis of guanine nucleotides. This enzyme with a molecular mass of approximately 56 kDa catalyzes the conversion of inosine monophosphate (IMP) to xanthosine monophosphate (XMP) an important step in the nucleotide biosynthesis. IMPDH2 is expressed in various tissues across the body with high expression in proliferating cells due to increased nucleotide requirements.
Biological function summary	IMPDH2 functions as a homotetramer forming part of a larger complex that regulates nucleotide levels. This regulation is critical for cell growth differentiation and proliferation. IMPDH2 activity drives the synthesis of guanine nucleotides which are essential for DNA and RNA synthesis influencing cellular communication and energy transfer.
Pathways	The target IMPDH2 has a significant role in the purine nucleotide biosynthesis pathway aligning with other enzymes like GMP synthetase. This pathway is critical in maintaining cellular nucleotide pools. IMPDH2's activity closely interacts with guanosine monophosphate reductase within the same pathway ensuring the balance between different types of nucleotides necessary for various cellular processes.

Associated diseases and disorders	Aberrations in IMPDH2 activity link to immunological diseases and cancer. Overexpression or upregulation of this enzyme contributes to the rapid proliferation seen in cancerous cells by maintaining high guanine nucleotide levels. Additionally IMPDH2 serves as a target for immunosuppressive drugs used in autoimmune conditions highlighting its relationship with T- and B-cell proliferation. This positions IMPDH2 in therapeutic strategies alongside its pathway partners to modulate disease outcomes.

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

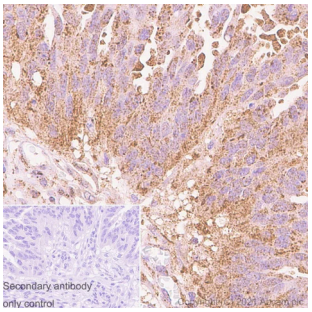
We do not recommend this combination. It is not covered by our product promise.

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.

6 product images



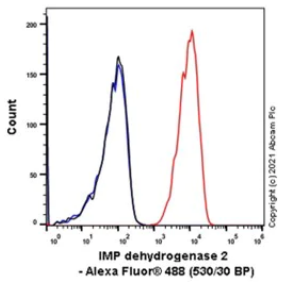
Immunohistochemistry (PFA perfusion fixed frozen sections) - Anti-IMPDH2 antibody [EPR8365(B)] (ab129165)

IMPDH2 Immunohistochemistry (PFA perfusion fixed frozen sections) staining using rabbit Anti-IMPDH2 antibody

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of human ovarian cancer tissue labelling IMPDH2 with ab129165 at 1/4000 for 30 mins at room temperature. A Rabbit specific IHC polymer detection kit HRP/DAB (ab209101) was used as the secondary antibody.

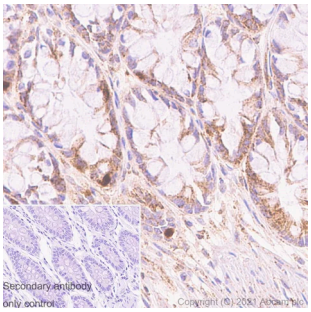
Heat mediated antigen retrieval using Bond™ Epitope Retrieval Solution 2 (pH 9.0) for 20 minutes. Negative control using only secondary antibody. Counterstained with hematoxylin.

The immunostaining was performed on a Leica Biosystems BOND® RX instrument.



Flow Cytometry (Intracellular) - Anti-IMPDH2 antibody [EPR8365(B)] (ab129165)

Intracellular Flow Cytometry analysis of K-562 (human chronic myelogenous leukemia lymphoblast) cells labeling IMPDH2 with ab129165 at 1/20 dilution (Red). Cells were fixed with 4% paraformaldehyde and permeabilised with 90% Methanol. Rabbit monoclonal - Alexa Fluor® 488 (Black) was used as the isotype control, cells without incubation with primary antibody and secondary antibody (Blue) were used as the unlabeled control.

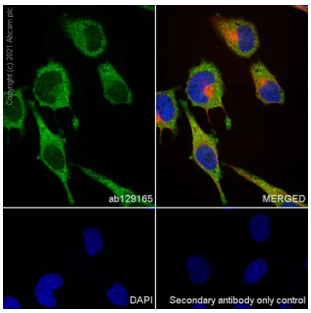


Immunohistochemistry (PFA perfusion fixed frozen sections) - Anti-IMPDH2 antibody [EPR8365(B)] (ab129165)

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of human colon tissue labelling IMPDH2 with ab129165 at 1/4000 for 30 mins at room temperature. A Rabbit specific IHC polymer detection kit HRP/DAB (ab209101) was used as the secondary antibody.

Heat mediated antigen retrieval using Bond™ Epitope Retrieval Solution 2 (pH 9.0) for 20 minutes. Negative control using only secondary antibody. Counterstained with hematoxylin.

The immunostaining was performed on a Leica Biosystems BOND® RX instrument.

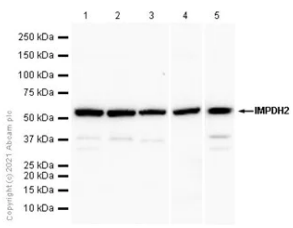


Immunocytochemistry/ Immunofluorescence - Anti-IMPDH2 antibody [EPR8365(B)] (ab129165)

Immunocytochemistry/Immunofluorescence analysis of HeLa (human cervix adenocarcinoma epithelial cell) cells labelling IMPDH2 (Green) with ab129165 at 1/1000 dilution. Cells were fixed with 4% paraformaldehyde and permeabilized with 0.1% Triton X-100. ab150081, an Alexa Fluor® 488-conjugated goat anti-rabbit IgG H&L, was used as the secondary antibody at a 1/1000. Tubulin (Red) was stained with ab195889, an Alexa Fluor® 594-conjugated anti-alpha tubulin antibody, at a 1/200 dilution. DAPI (Blue) was used as the nuclear counterstain. Negative control using only secondary antibody.

Confocal image showing cytoplasmic and weak nuclear staining in HeLa cells.

Image was taken with a confocal microscope (Leica-Microsystems, TCS SP8).



Western blot - Anti-IMPDH2 antibody [EPR8365(B)] (ab129165)

Blocking and diluting buffer and concentration: 5% NFDM/TBST
All lanes:
Western blot - Anti-IMPDH2 antibody [EPR8365(B)] (ab129165) at 1/10000 dilution

Lane 1:
K-562 (Human chronic myelogenous leukemia lymphoblast) whole cell lysate at 20 µg

Lane 2:
MCF7 (Human breast adenocarcinoma epithelial cell) whole cell lysate at 20 µg

Lanes 3 - 4:
Rat spleen lysate at 20 µg

Lane 5:
Mouse spleen lysate at 20 µg

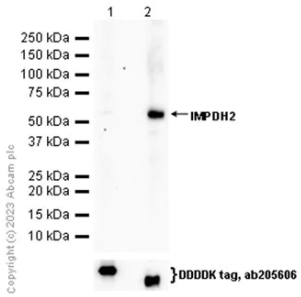
Secondary

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

Predicted band size: 56 kDa

Observed band size: 56 kDa

Exposure time: 60s



Western blot - Anti-IMPDH2 antibody [EPR8365(B)] (ab129165)

Blocking and diluting buffer and concentration: 5% NFDM/TBST
All lanes:
Western blot - Anti-IMPDH2 antibody [EPR8365(B)] (ab129165) at 1/1000 dilution

Lane 1:
DDDK tagged human full length IMPDH1 recombinant protein at 10 µg

Lane 2:
DDDK tagged human full length IMPDH2 recombinant protein at 10 µg

Secondary

All lanes:
NFDM/TBST at 1/20000 dilution

Predicted band size: 56 kDa

Observed band size: 56 kDa

Exposure time: 140s

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