abcam

ab154817

Anti-UGPase antibody [EPR10627(B)]

Recombinant | RabMAb

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Preservative: 0.01% Sodium azide Constituents: PBS, 50% Tissue culture supernatant, 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	EPR10627(B)
Purity	Tissue culture supernatant

Reactivity data

IHC-P

Tested

Species	Human
Dilution info	1/50 - 1/100
Notes	-

Expected

Species	Mouse

Dilution info	Use at an assay dependent concentration.
Notes	-

Predicted

Species	Rat, Pig
Dilution info	-
Notes	-

IP

Not recommended

Species	Mouse, Human, Rat, Pig
Dilution info	-
Notes	-

WB

Tested

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

Expected

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

Predicted

Species	Pig
Dilution info	-
Notes	-

ICC/IF

Not recommended

Species	Mouse, Human, Rat, Pig
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

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

Expected

Species	Human
Dilution info	Use at an assay dependent concentration.
Notes	-

Predicted

Species	Rat, Pig
Dilution info	-
Notes	-

Target data

See full target information UGP2

Function UTP--glucose-1-phosphate uridylyltransferase catalyzing the conversion of glucose-1-phosphate into UDP-glucose, a crucial precursor for the production of glycogen.

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	UGPase also known as UDP-glucose pyrophosphorylase plays an important role in carbohydrate metabolism by catalyzing the reversible formation of UDP-glucose and pyrophosphate from glucose-1-phosphate and UTP. The enzyme has a mass of about 52 kDa. UGPase is expressed in many tissues but especially in liver muscle and brain where carbohydrate metabolism is highly active. Its presence ensures the availability of UDP-glucose which serves as a glycosyl donor in the synthesis of glycogen.
Biological function summary	UGPase provides UDP-glucose a central metabolite in carbohydrate biosynthesis. It does not function as part of a complex but independently supports various biosynthetic pathways. UDP-glucose acts as a precursor not only for glycogen but also for glycoproteins glycolipids and proteoglycans. UGPase activity is critical for maintaining glucose homeostasis and its regulation directly affects carbohydrate allocation and storage.
Pathways	UGPase operates in the glycogen synthesis pathway and the pentose phosphate pathway. In the glycogen synthesis pathway UGPase works closely with glycogen synthase which converts UDP-glucose into glycogen helping in energy storage. In the pentose phosphate pathway UDP-glucose serves as a substrate for enzymes modifying carbohydrate structures. These pathway interactions place UGPase as an essential node linking carbohydrate metabolism routes.

Associated diseases and disorders	The dysregulation of UGPase affects disorders like glycogen storage diseases and diabetes. An abnormal UGPase activity can lead to inefficient glycogen storage impacting energy balance and contributing to these conditions. The enzyme also connects with proteins like glycogen synthase in glycogen storage diseases illustrating how alterations in its function can disturb glycogen synthesis and storage. Understanding UGPase activity therefore offers insights into metabolic imbalances seen in these diseases.

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

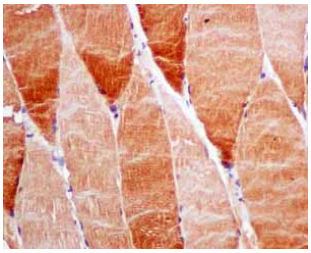
We do not recommend this combination. It is not covered by our product promise.

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.

10 product images

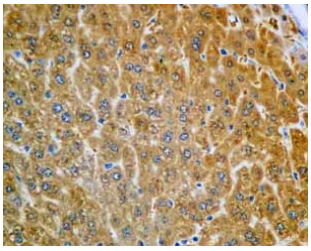


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-UGPase antibody [EPR10627(B)] (ab154817)

UGPase Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-UGPase antibody

Immunohistochemical analysis of paraffin embedded Human skeletal muscle tissue using ab154817 showing +ve staining.

Perform heat mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.

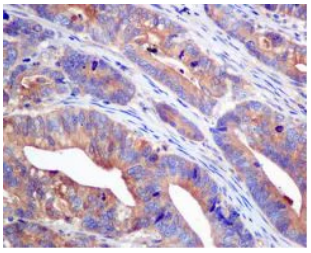


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-UGPase antibody [EPR10627(B)] (ab154817)

UGPase Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-UGPase antibody

Immunohistochemical analysis of paraffin embedded Human normal liver tissue using ab154817 showing +ve staining.

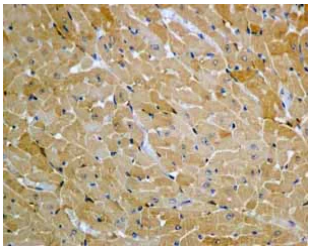
Perform heat mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-UGPase antibody [EPR10627(B)] (ab154817)

UGPase Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-UGPase antibody

Immunohistochemical analysis of paraffin-embedded Human colon adenocarcinoma labeling UGPase using ab154817 at 1/50 dilution.
Perform heat mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.

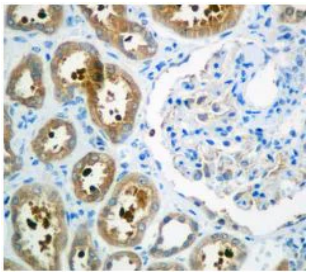


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-UGPase antibody [EPR10627(B)] (ab154817)

UGPase Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-UGPase antibody

Immunohistochemical analysis of paraffin embedded Human normal heart tissue using ab154817 showing +ve staining.

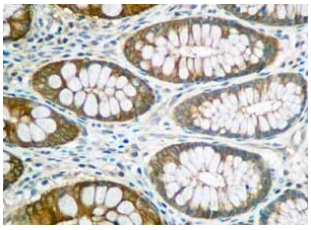
Perform heat mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-UGPase antibody [EPR10627(B)] (ab154817)

UGPase Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-UGPase antibody

Immunohistochemical analysis of paraffin-embedded Human kidney labeling UGPase using ab154817 at 1/50 dilution.
Perform heat mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.

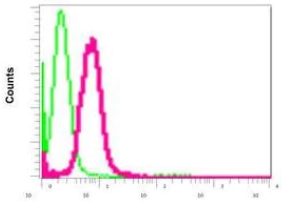


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-UGPase antibody [EPR10627(B)] (ab154817)

UGPase Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-UGPase antibody

Immunohistochemical analysis of paraffin embedded Human normal colon tissue using ab154817 showing +ve staining.

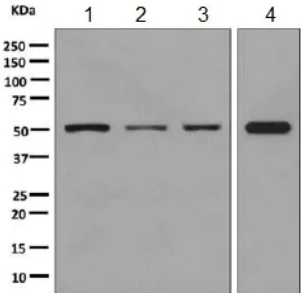
Perform heat mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.



Flow Cytometry (Intracellular) - Anti-UGPase antibody [EPR10627(B)] (ab154817)

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

Intracellular flow cytometric analysis of permeabilized NIH 3T3 cells labeling UGPase using ab154817 (red) at 1/10 dilution or a rabbit IgG (negative) (green).



Western blot - Anti-UGPase antibody [EPR10627(B)] (ab154817)

UGPase Western blot staining using rabbit Anti-UGPase antibody

All lanes:
Western blot - Anti-UGPase antibody [EPR10627(B)] (ab154817) at 1/1000 dilution

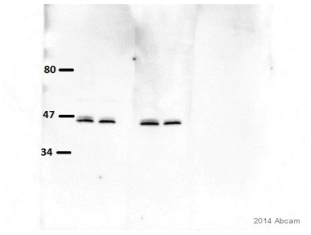
Lane 1:
HepG2 cell lysate at 10 µg

Lane 2:
HeLa cell lysate at 10 µg

Lane 3:
NIH 3T3 cell lysate at 10 µg

Lane 4:
Human fetal liver tissue lysate at 10 µg

Predicted band size: 57 kDa



This image is courtesy of a customer review submitted by Shannon Cruzen

Western blot - Anti-UGPase antibody [EPR10627(B)] (ab154817)

Lanes 1 - 2:
Western blot - Anti-UGPase antibody [EPR10627(B)] (ab154817) at 1/10000 dilution

Lanes 3 - 4:
Western blot - Anti-UGPase antibody [EPR10627(B)] (ab154817) at 1/20000 dilution

Lanes 5 - 6:
Western blot - Anti-UGPase antibody [EPR10627(B)] (ab154817)

All lanes:
Pig muscle sarcoplasm tissue lysate at 40 µg

Secondary

All lanes:
HRP-conjugated goat anti-rabbit IgG (H+L) polyclonal at 1/10000 dilution

Developed using the ECL technique.

Performed under reducing conditions.

Predicted band size: 57 kDa

Observed band size: 45-47 kDa

Exposure time: 5min

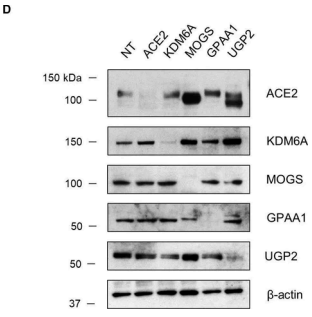


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Western blot - Anti-UGPase antibody [EPR10627(B)] (ab154817)

UGPase Western blot staining using rabbit Anti-UGPase antibody

UGPase western blot using anti-UGPase antibody [EPR10627(B)] ab154817. Publication image and figure legend from Sherman, E. J., Mirabelli, C., et al., 2022, PLoS Pathog, PubMed 35231079.

ab154817 was used in this publication in western blot. This may not be the same as the application(s) guaranteed by Abcam. For a full list of applications guaranteed by Abcam for ab154817 please see the product overview.

Interrogation of ACE2 modifiers in Calu-3 cells.(A) FACS plots of ACE2 surface staining in Calu-3 cells treated with control nontargeting (NT) or SMAD4-targeting gRNA for each of 3 technical replicates. (B) Volcano plots of MAGeCK Robust Rank Aggregation scores and gene-level gRNA log2 fold-change in ACE2negative relative to ACE2positive populations for each gene tested in the focused CRISPR library in Calu-3 cells. Genes with FDR <0.05 and absolute log2 fold-change >1 are highlighted, with positive regulators in blue and negative regulators in red. (C) Comparison of log2 fold-change in ACE2negative relative to ACE2positive populations in focused CRISPR screens of HuH7 (x-axis) and Calu-3 (y-axis). Only ACE2, highlighted in blue, was identified in both screens with FDR<0.05 and absolute log2 fold-change >1. Genes identified as significant in only the HuH7 or Calu-3 screens are highlighted in magenta and red, respectively. (D) Immunoblot of lysates collected from Calu-3 cells targeted by CRISPR with a gRNA against the indicated gene or a nontargeting (NT) control sequence. (E) Percentage of cells with detectable surface ACE2 staining after CRISPR-mediated single gene disruption of the indicated target gene or a nontargeting control in Calu-3 cells. Candidate genes associated with positive or negative regulation of ACE2 in the CRISPR screen are highlighted in blue and red, respectively. ACE2-positive gates were defined on control unstained cells and the proportion of ACE2-positive cells for each population is displayed for each of 3–6 technical replicates. Error bars depict standard deviation. Asterisks indicate p<0.05 by Student's t-test. Source data and statistical analysis are provided in S9 Table.

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