abcam

ab133720

Anti-AGL/Alpha-glucosidase antibody [EPR8880]

Recombinant | RabMAb | KO Validated

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), 0.21% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	EPR8880
Purification technique	Affinity purification Protein A
Dissociation constant	6.9 x 10^{-11} M
Concentration	0.847 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC-P

Tested

Species	Human
Dilution info	1/2000
Notes	**For unpurified use at 1/100 - 1/250.**

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

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

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	-

ICC/IF

Tested

Species	Human
Dilution info	1/100 - 1/250
Notes	-

Expected

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

Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/80
Notes	ab172730 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody. For unpurified use at 1/100-1/500.

Expected

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

Target data

See full target information AGL

Function	Multifunctional enzyme acting as 1,4-alpha-D-glucan:1,4-alpha-D-glucan 4-alpha-D-glycosyltransferase and amylo-1,6-glucosidase in glycogen degradation.

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, 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	Alpha-glucosidase also known as AGL is an enzyme that breaks down carbohydrates by hydrolyzing alpha-14 glycosidic bonds in glycogen converting them into glucose molecules. This enzyme is important for the body's ability to derive glucose from stored glycogen a necessary process for maintaining energy levels. AGL is predominantly expressed in liver tissue where it plays an important role in glycogen metabolism. The AGL enzyme has an approximate mass of around 104 kDa. Additionally AGL can be referred to as alpha-16-glucosidase due to its specific hydrolytic capabilities on branching points in glycogen.
Biological function summary	AGL functions as part of the glycogen debranching enzyme complex which is important for glycogen catabolism. It cooperates with other enzymes to effectively mobilize glucose from glycogen stores. AGL's debranching activity ensures the smooth continuation of glycogenolysis providing glucose to meet energy demands during fasting or intense physical activity. This highlights the enzyme's importance in glucose homeostasis and metabolic processes that require rapid energy availability.
Pathways	AGL participates in the glycogenolysis and gluconeogenesis pathways. It partners with phosphorylase to release glucose-1-phosphate from glycogen ensuring energy supply during fasting conditions. The glycogenolysis pathway relies significantly on AGL for breaking down glycogen's branched structures while glucose-6-phosphatase assists in converting glucose-6-phosphate into free glucose. AGL's role in these pathways illustrates its importance in energy metabolism and glucose regulation.
Associated diseases and disorders	AGL's dysfunction is linked to glycogen storage disease type III known as Cori disease. This genetic disorder results from mutations in the AGL gene causing a build-up of abnormally structured glycogen in the liver and muscles leading to symptoms such as hepatomegaly muscular weakness and hypoglycemia. AGL along with other enzymes involved in glycogen metabolism like phosphorylase kinase is a target for therapeutic interventions aimed at managing such glycogen storage 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

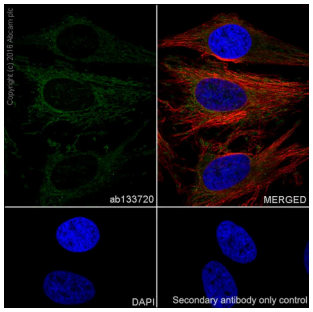
We do not recommend this combination. It is not covered by our product promise.

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.

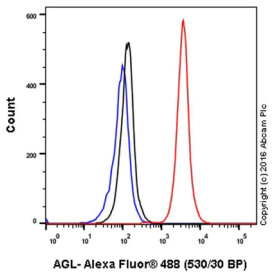
11 product images



Immunocytochemistry/ Immunofluorescence - Anti-AGL/Alpha-glucosidase antibody [EPR8880] (ab133720)

AGL/Alpha-glucosidase Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-AGL/Alpha-glucosidase antibody

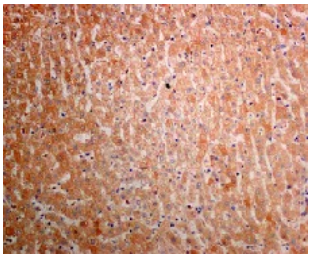
Immunocytochemistry/ Immunofluorescence analysis of HeLa (Human cervix adenocarcinoma epithelial cell) cells labeling AGL/Alpha-glucosidase with Purified ab133720 at 1:100 dilution. Cells were fixed in 4% Paraformaldehyde and permeabilized with 0.1% tritonX-100. Cells were counterstained with ab195889 Anti-alpha Tubulin antibody [DM1A] - Microtubule Marker (Alexa Fluor® 594) 1:200. ab150077 Goat anti rabbit IgG(Alexa Fluor® 488) was used as the secondary antibody at 1:1000 dilution. DAPI nuclear counterstain. PBS instead of the primary antibody was used as the secondary antibody only control.



Flow Cytometry (Intracellular) - Anti-AGL/Alpha-glucosidase antibody [EPR8880] (ab133720)

AGL/Alpha-glucosidase Flow Cytometry (Intracellular) staining using rabbit Anti-AGL/Alpha-glucosidase antibody

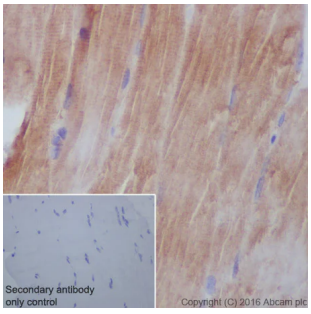
Intracellular Flow Cytometry analysis of K-562 (Human chronic myelogenous leukemia lymphoblast) cells labeling AGL/Alpha-glucosidase with purified ab133720 at 1/80 dilution (10µg/ml) (red). Cells were fixed with 4% Paraformaldehyde and permeabilised with 90% methanol. A Goat anti rabbit IgG (Alexa Fluor® 488) secondary antibody was used at 1/2000 dilution. Isotype control - Rabbit monoclonal IgG (Black). Unlabeled control - Cell without incubation with primary antibody and secondary antibody (Blue).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-AGL/Alpha-glucosidase antibody [EPR8880] (ab133720)

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

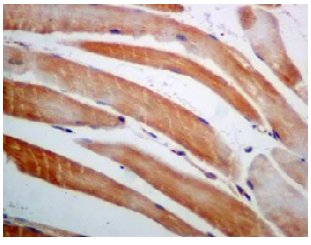
Immunohistochemical analysis of paraffin-embedded Human liver tissue labelled with unpurified ab133720 at 1/100 dilution.
Perform heat mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-AGL/Alpha-glucosidase antibody [EPR8880] (ab133720)

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

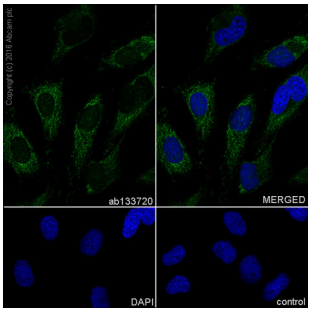
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of Human skeletal muscle tissue sections labeling AGL/Alpha-glucosidase with Purified ab133720 at 1:2000 dilution (0.4 µg/ml). Heat mediated antigen retrieval was performed using ab93684 (Tris/EDTA buffer, pH 9.0). Tissue was counterstained with Hematoxylin. ab97051 Goat Anti-Rabbit IgG H&L (HRP)
secondary antibody was used at 1:500 dilution. PBS instead of the primary antibody was used as the negative control.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-AGL/Alpha-glucosidase antibody [EPR8880] (ab133720)

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

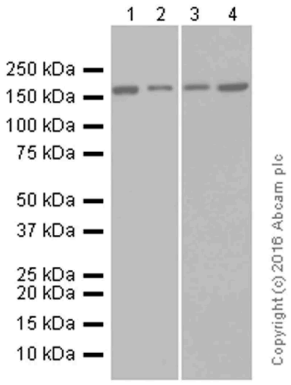
Immunohistochemical analysis of paraffin-embedded Human muscle tissue labelled with unpurified ab133720 at 1/100 dilution.
Perform heat mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.



Immunocytochemistry/ Immunofluorescence - Anti-AGL/Alpha-glucosidase antibody [EPR8880] (ab133720)

AGL/Alpha-glucosidase Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-AGL/Alpha-glucosidase antibody

Immunocytochemistry/Immunofluorescence analysis of HeLa (Human epithelial cell line from cervix adenocarcinoma) labeling AGL/Alpha-glucosidase with purified ab133720 at 1/250 dilution. Cells were fixed with 4% PFA and permeabilized with 0.1% tritonX-100. ab150077 Goat anti rabbit IgG (Alexa Fluor®488) at 1/1000 was used as the secondary antibody. Nuclei were counterstained with DAPI. PBS was used instead of the primary antibody as the negative control.



Western blot - Anti-AGL/Alpha-glucosidase antibody [EPR8880] (ab133720)

AGL/Alpha-glucosidase Western blot staining using rabbit Anti-AGL/Alpha-glucosidase antibody

Blocking and diluting buffer: 5% NFDM/TBST
All lanes:
Western blot - Anti-AGL/Alpha-glucosidase antibody [EPR8880] (ab133720) at 1/5000 dilution

Lane 1:
Human fetal muscle lysates at 20 µg

Lane 2:
Human fetal heart lysates at 20 µg

Lane 3:
Mouse muscle lysates at 20 µg

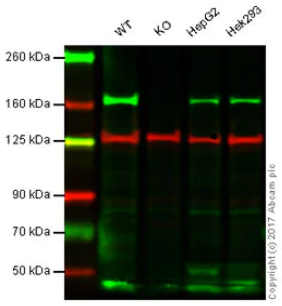
Lane 4:
Rat muscle lysates at 20 µg

Secondary

All lanes:
Anti-Rabbit IgG (HRP), specific to the non-reduced form of IgG at 1/2000 dilution

Predicted band size: 175 kDa

Observed band size: 175 kDa



Western blot - Anti-AGL/Alpha-glucosidase antibody [EPR8880] (ab133720)

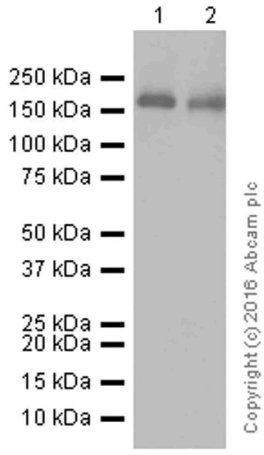
AGL/Alpha-glucosidase Western blot staining using rabbit Anti-AGL/Alpha-glucosidase antibody

Lane 1: Wild type HAP1 whole cell lysate (20 µg)
Lane 2: AGL/Alpha-glucosidase knockout HAP1 whole cell lysate (20 µg)
Lane 3: HepG2 whole cell lysate (20 µg)
Lane 4: Hek293 whole cell lysate (20 µg
Lanes 1 - 4: Merged signal (red and green). Green - ab133720 observed at 170 kDa. Red - loading control, ab18058, observed at 130 kDa.

Unpurified ab133720 was shown to specifically react with AGL/Alpha-glucosidase when AGL/Alpha-glucosidase knockout samples were used. Wild-type and AGL/Alpha-glucosidase knockout samples were subjected to SDS-PAGE.
Unpurified ab133720 and ab18058 (Mouse anti Vinculin loading control) were incubated overnight at 4°C at 1/1000 dilution and 1/10000 dilution respectively. Blots were developed with Goat anti-Rabbit IgG H&L (IRDye® 800CW) preabsorbed ab216773 and Goat anti-Mouse IgG H&L (IRDye® 680RD) preabsorbed ab216776 secondary antibodies at 1/10000 dilution for 1 hour at room temperature before imaging.
All lanes:
Western blot - Anti-AGL/Alpha-glucosidase antibody [EPR8880] (ab133720)

Predicted band size: 175 kDa

Observed band size: 170 kDa



Western blot - Anti-AGL/Alpha-glucosidase antibody [EPR8880] (ab133720)

Blocking and diluting buffer: 5% NFDM/TBST
All lanes:
Western blot - Anti-AGL/Alpha-glucosidase antibody [EPR8880] (ab133720) at 1/1000 dilution

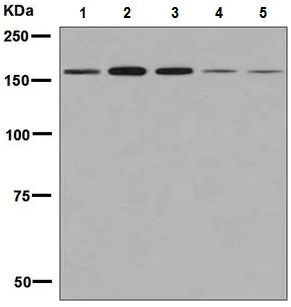
Lane 1:
K-562 (Human chronic myelogenous leukemia lymphoblast) whole cell lysates at 20 µg

Lane 2:
HEK-293 (Human embryonic kidney epithelial cell) whole cell lysates at 20 µg

Secondary

All lanes:
Anti-Rabbit IgG (HRP), specific to the non-reduced form of IgG at 1/2000 dilution

Predicted band size: 175 kDa



Western blot - Anti-AGL/Alpha-glucosidase antibody [EPR8880] (ab133720)

All lanes:
Western blot - Anti-AGL/Alpha-glucosidase antibody [EPR8880] (ab133720) at 1/1000 dilution

Lane 1:
Human fetal muscle lysate at 10 µg

Lane 2:
Mouse muscle lysate at 10 µg

Lane 3:
Human fetal heart lysate at 10 µg

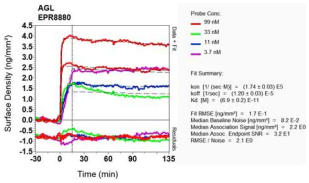
Lane 4:
K562 cell lysate at 10 µg

Lane 5:
293T cell lysate at 10 µg

Secondary

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

Predicted band size: 175 kDa



OI-RD Scanning - Anti-AGL/Alpha-glucosidase antibody [EPR8880] (ab133720)

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'.