abcam

Product datasheet

Anti-Glucose Transporter GLUT1 antibody [EPR3915] - Low endotoxin, Azide free ab196357

KO VALIDATED Recombinant RabMAb

1 References 23 Images

Overview

Product name	Anti-Glucose Transporter GLUT1 antibody [EPR3915] - Low endotoxin, Azide free
Description	Rabbit monoclonal [EPR3915] to Glucose Transporter GLUT1 - Low endotoxin, Azide free
Host species	Rabbit
Specificity	We recommend not to boil the samples after lysis to get desired WB bands.
Tested applications	**Suitable for:** Flow Cyt (Intra), WB, IHC-P, ICC/IF
Species reactivity	**Reacts with:** Mouse, Rat, Human
Immunogen	Synthetic peptide. This information is proprietary to Abcam and/or its suppliers.
Positive control	WB: HepG2 and HT-29 whole cell lysates. IHC-P: Rat kidney tissue; mouse liver tissue; human lung carcinoma, cervical carcinoma, colon carcinoma, liver, colon, kidney carcinoma, skeletal muscle, urinary bladder, heart and breast tissue. ICC/IF: HepG2 cells and A549 (SLC2A1 knockout A549 cells used as a negative control) cells. Flow Cyt (intra): HeLa and Jurkat cells.
General notes	ab196357 is the carrier-free version of **ab115730**. Our **carrier-free** antibodies are typically supplied in a PBS-only formulation, purified and free of BSA, sodium azide and glycerol. The carrier-free buffer and high concentration allow for increased conjugation efficiency. This conjugation-ready format is designed for use with fluorochromes, metal isotopes, oligonucleotides, and enzymes, which makes them ideal for antibody labelling, functional and cell-based assays, flow-based assays (e.g. mass cytometry) and Multiplex Imaging applications. Use our **conjugation kits** for antibody conjugates that are ready-to-use in as little as 20 minutes with <1 minute hands-on-time and 100% antibody recovery: available for fluorescent dyes, HRP, biotin and gold. This product is compatible with the Maxpar® Antibody Labeling Kit from Fluidigm, without the need for antibody preparation. Maxpar® is a trademark of Fluidigm Canada Inc. 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 production

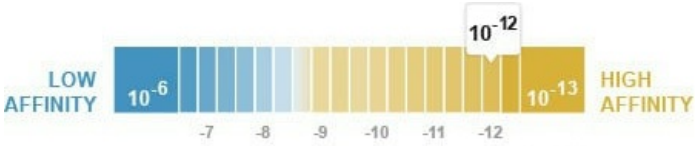
For more information **see here**.

Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to **RabMAb® patents**.

Our **Low endotoxin, azide-free formats** have low endotoxin level (≤ 1 EU/ml, determined by the LAL assay) and are free from azide, to achieve consistent experimental results in functional assays.

Properties

Form	Liquid
Storage instructions	Shipped at 4°C. Store at +4°C. Do Not Freeze.
Dissociation constant (K_D)	$K_D = 7.70 \times 10^{-12}$ M



Learn more about K_D

Storage buffer	pH: 7.20 Constituent: PBS
Carrier free	Yes
Purity	Protein A purified
Clonality	Monoclonal
Clone number	EPR3915
Isotype	IgG

Applications

The Abpromise guarantee Our **Abpromise guarantee** covers the use of ab196357 in the following tested applications.

The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

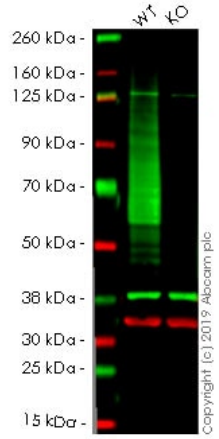
Application	Abreviews	Notes
Flow Cyt (Intra)		Use at an assay dependent concentration. **ab199376** - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody.
WB		Use at an assay dependent concentration. Detects a band of approximately 40-60 kDa (predicted molecular weight: 54 kDa). Please check the parent abID, **ab115730**, for more information on dilutions.
IHC-P		Use at an assay dependent concentration. Perform heat mediated antigen retrieval before commencing with IHC staining protocol. See **IHC antigen retrieval protocols**.

Application	Abreviews	Notes
ICC/IF		Use at an assay dependent concentration. This product gave a positive signal in A549 (SLC2A1 knockout A549 cells used as a negative control) fixed with 100% methanol (5 min).

Target

Function	Facilitative glucose transporter. This isoform may be responsible for constitutive or basal glucose uptake. Has a very broad substrate specificity; can transport a wide range of aldoses including both pentoses and hexoses.
Tissue specificity	Expressed at variable levels in many human tissues.
Involvement in disease	Defects in SLC2A1 are the cause of glucose transporter type 1 deficiency syndrome (GLUT1DS) [MIM:606777]; also known as blood-brain barrier glucose transport defect. This disease causes a defect in glucose transport across the blood-brain barrier. It is characterized by infantile seizures, delayed development, and acquired microcephaly. Defects in SLC2A1 are the cause of dystonia type 18 (DYT18) [MIM:612126]. DYT18 is an exercise-induced paroxysmal dystonia/dyskinesia. Dystonia is defined by the presence of sustained involuntary muscle contraction, often leading to abnormal postures. DYT18 is characterized by attacks of involuntary movements triggered by certain stimuli such as sudden movement or prolonged exercise. In some patients involuntary exertion-induced dystonic, choreoathetotic, and ballistic movements may be associated with macrocytic hemolytic anemia.
Sequence similarities	Belongs to the major facilitator superfamily. Sugar transporter (TC 2.A.1.1) family. Glucose transporter subfamily.
Post-translational modifications	Phosphorylated upon DNA damage, probably by ATM or ATR.
Cellular localization	Cell membrane. Melanosome. Localizes primarily at the cell surface (By similarity). Identified by mass spectrometry in melanosome fractions from stage I to stage IV.

Images



Western blot - Anti-Glucose Transporter GLUT1 antibody [EPR3915] - Low endotoxin, Azide free (ab196357)

All lanes : Anti-Glucose Transporter GLUT1 antibody [EPR3915] (**ab115730**) at 1 µg/ml

Lane 1 : Wild-type A549 whole cell lysate
Lane 2 : Human SLC2A1 (Glucose Transporter GLUT1) knockout A549 cell line (**ab261869**)

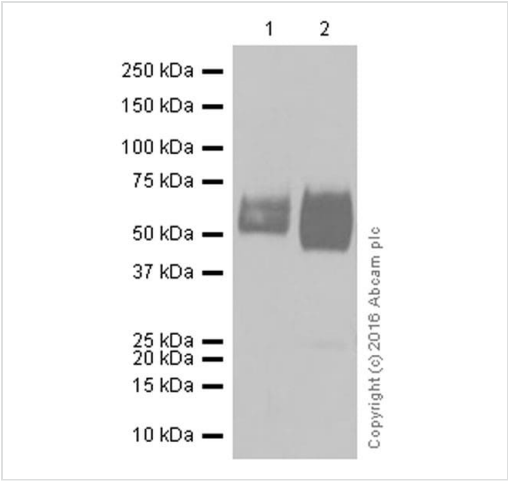
Lysates/proteins at 20 µg per lane.

Predicted band size: 54 kDa

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab196357).

Lanes 1 - 2: Merged signal (red and green). Green - ab196357 observed at 54 kDa. Red - loading control, **ab8245**, observed at 37 kDa.

ab196357 was shown to recognize in wild-type A549 cells as signal was lost at the expected MW in SLC2A1 knockout cells. Additional cross-reactive bands were observed in the wild-type and knockout cells. Wild-type and SLC2A1 knockout samples were subjected to SDS-PAGE. Ab196357 and **ab8245** (Mouse anti-GAPDH loading control) were incubated overnight at 4°C at 1 µg/ml and 1/20000 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 1/20000 dilution for 1 hour at room temperature before imaging.



Western blot - Anti-Glucose Transporter GLUT1 antibody [EPR3915] - Low endotoxin, Azide free (ab196357)

All lanes : Anti-Glucose Transporter GLUT1 antibody [EPR3915] - Low endotoxin, Azide free (ab196357)

Lane 1 : HepG2 (human hepatocellular carcinoma) whole cell lysate
Lane 2 : HT-29 (Human colorectal adenocarcinoma epithelial cell) whole cell lysate

Lysates/proteins at 15 µg per lane.

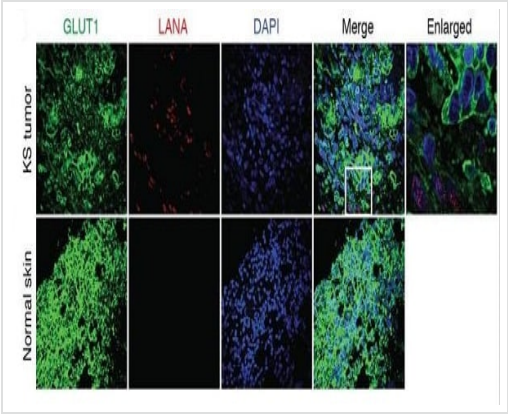
Secondary
All lanes : Goat Anti-Rabbit IgG H&L (HRP) (**ab97051**)

Predicted band size: 54 kDa
Observed band size: 40-60 kDa

Exposure time: 3 minutes

Blocking buffer and concentration: 5% NFDM/TBST

Diluting buffer and concentration: 5% NFDM/TBST



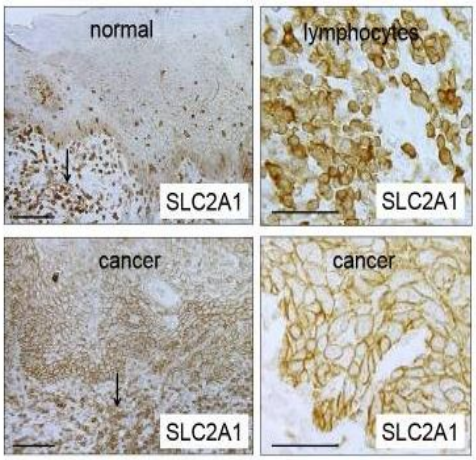
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Glucose Transporter GLUT1 antibody [EPR3915] - Low endotoxin, Azide free (ab196357)

Zhu Y. et al PLoS Pathog. 2016 May 17;12(5):e1005648. doi: 10.1371/journal.ppat.1005648. eCollection 2016 May.

GLUT1 and GLUT3 are downregulated in KSHV-infected cells in human KS tumors

Representative illustration of dual immunofluorescence detection of LANA and GLUT1 or in a normal human skin section and a Karposi Sarcoma (KS) tumor section. Tissues were fixed with paraformaldehyhde and paraffin-embedded.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (**ab115730**).



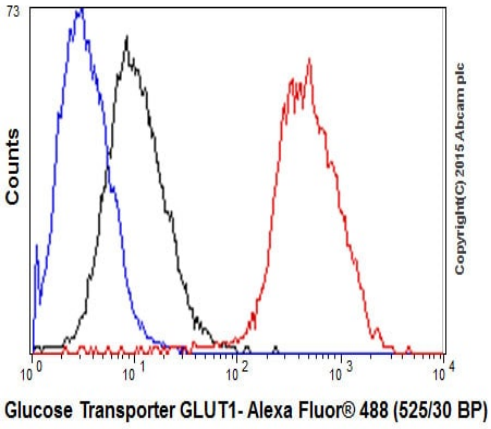
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Glucose Transporter GLUT1 antibody [EPR3915] - Low endotoxin, Azide free (ab196357)

Khaom R. et al. PLoS One. 2016 Aug 11;11(8):e0161163. doi: 10.1371/journal.pone.0161163. eCollection 2016.

Immunohistochemical expression of Glut1 in normal tongue epithelium and tongue cancer. Expression was greatest in lymphocytes (arrows in left upper and lower panels). In the normal oral epithelium, Glut1 was weakly expressed in the basal and spinous cells (left upper panel). In OSCC, Glut1 was upregulated, showing a level of expression comparable with lymphocytes (left and right lower panels). Scale bar, 100 µm.

Note: Glut1 = SLC2A (alternative names for the same target).

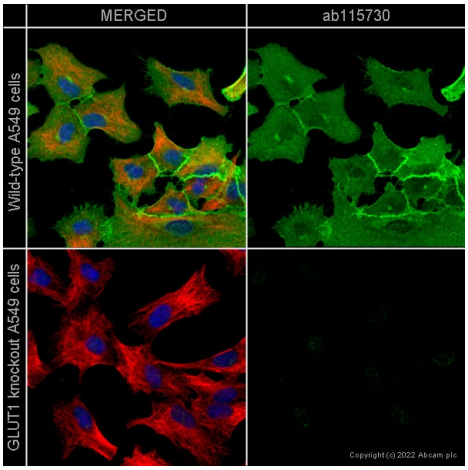
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (**ab115730**).



Flow Cytometry (Intracellular) - Anti-Glucose Transporter GLUT1 antibody [EPR3915] - Low endotoxin, Azide free (ab196357)

Overlay histogram showing Jurkat cells fixed in 4% PFA and stained with purified **ab115730** at a dilution of 1/40 (red line). The secondary antibody used was Alexa Fluorr® 488 goat anti-rabbit at a dilution of 1/500. Rabbit monoclonal IgG was used as an isotype control (black line) and cells incubated in the absence of both primary and secondary antibody were used as a negative control (blue line).

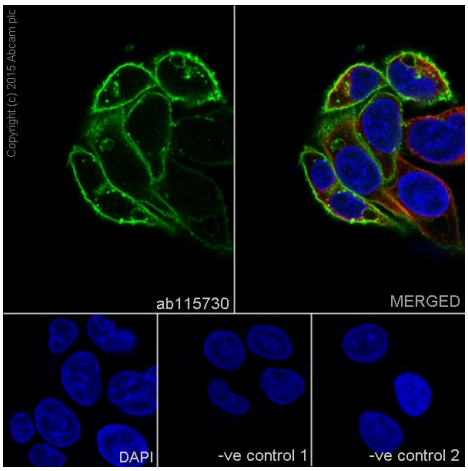
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (**ab115730**).



Immunocytochemistry/ Immunofluorescence - Anti-Glucose Transporter GLUT1 antibody [EPR3915] - Low endotoxin, Azide free (ab196357)

ab115730 staining SLC2A1 in wild-type A549 cells, with negative expression in SLC2A1 knockout A549 cells. The cells were fixed with 100% methanol (5 min), permeabilised with 0.1% Triton x-100 for 5 minutes and then blocked with 1% BSA/10% normal goat serum/0.3M glycine in 0.1% PBS-Tween for 1h. The cells were then incubated overnight at +4°C with **ab115730** at 1 µg/ml and **ab7291**, Mouse monoclonal [DM1A] to alpha Tubulin at 0.5 µg/ml. Cells were then incubated with **ab150081**, Goat polyclonal Secondary Antibody to Rabbit IgG - H&L (Alexa Fluor® 488), pre-adsorbed at 1/1000 dilution (shown in green) and **ab150119**, Goat polyclonal Secondary Antibody to Mouse IgG - H&L (Alexa Fluor® 647), pre-adsorbed at 1/1000 dilution (shown in red). Nuclear DNA was labelled with DAPI (shown in blue).Image was acquired with a confocal microscope (Leica-Microsystems TCS SP8) and a single confocal section is shown.

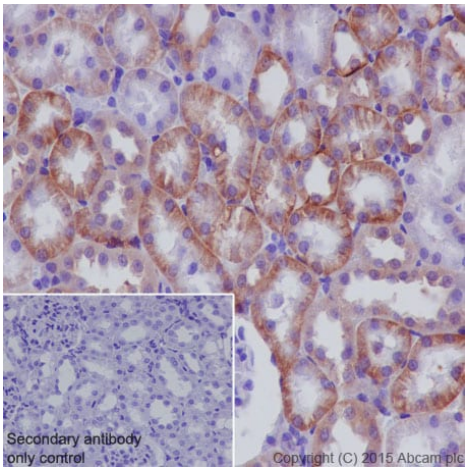
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (**ab115730**).



Immunocytochemistry/ Immunofluorescence - Anti-Glucose Transporter GLUT1 antibody [EPR3915] - Low endotoxin, Azide free (ab196357)

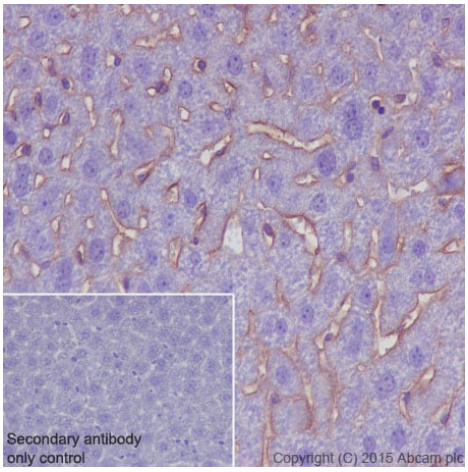
Immunofluorescence staining of HepG2 cells with purified **ab115730** at a working dilution of 1/100, counter-stained with DAPI. The secondary antibody was Alexa Fluor® 488 goat anti-rabbit (**ab150077**), used at a dilution of 1/1000. **ab7291**, a mouse anti-tubulin antibody (1/1000), was used to stain tubulin along with **ab150120** (Alexa Fluor® 594 goat anti-mouse, 1/1000), shown in the top right hand panel. The cells were fixed in 4% PFA and permeabilized using 0.1% Triton X 100. The negative controls are shown in bottom middle and right hand panels - for negative control 1, purified **ab115730** was used at a dilution of 1/500 followed by an Alexa Fluor® 594 goat anti-mouse antibody (**ab150120**) at a dilution of 1/500. For negative control 2, **ab7291** (mouse anti-tubulin) was used at a dilution of 1/500 followed by an Alexa Fluor® 488 goat anti-rabbit antibody (**ab150077**) at a dilution of 1/400.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (**ab115730**).



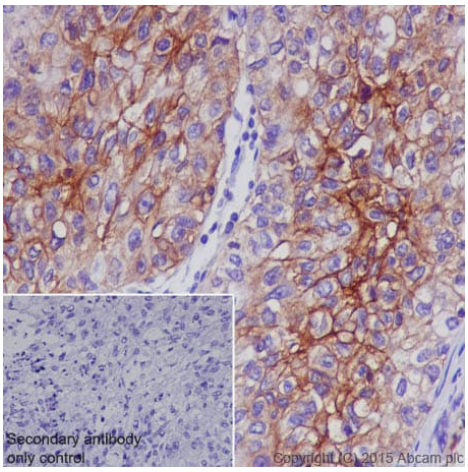
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Glucose Transporter GLUT1 antibody [EPR3915] - Low endotoxin, Azide free (ab196357)

Immunohistochemical staining of paraffin embedded rat kidney with purified **ab115730** at a working dilution of 1/500. The secondary antibody used is **ab97051**, a goat anti-rabbit IgG (H&L) at a dilution of 1/500. The sample is counter-stained with hematoxylin. Antigen retrieval was perfomed using Tris-EDTA buffer, pH 9.0. PBS was used instead of the primary antibody as the negative control, and is shown in the inset.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (**ab115730**).



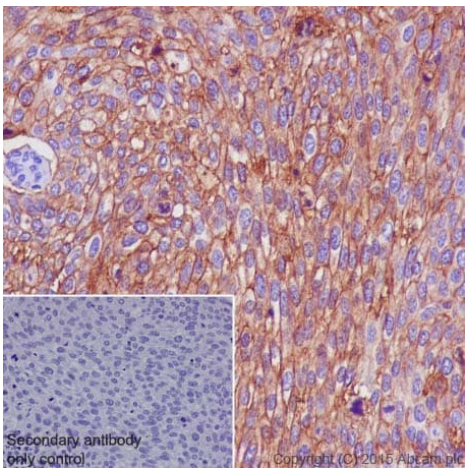
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Glucose Transporter GLUT1 antibody [EPR3915] - Low endotoxin, Azide free (ab196357)

Immunohistochemical staining of paraffin embedded mouse liver with purified **ab115730** at a working dilution of 1/500. The secondary antibody used is **ab97051**, a goat anti-rabbit IgG (H&L) at a dilution of 1/500. The sample is counter-stained with hematoxylin. Antigen retrieval was perfomed using Tris-EDTA buffer, pH 9.0. PBS was used instead of the primary antibody as the negative control, and is shown in the inset.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (**ab115730**).



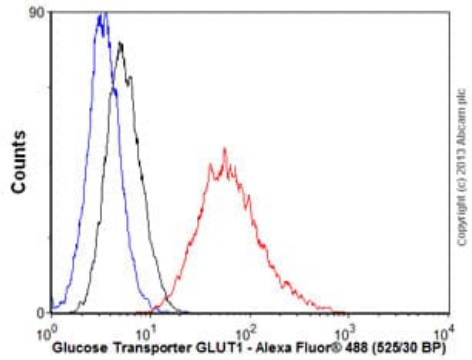
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Glucose Transporter GLUT1 antibody [EPR3915] - Low endotoxin, Azide free (ab196357)

Immunohistochemical staining of paraffin embedded human lung carcinoma with purified **ab115730** at a working dilution of 1/500. The secondary antibody used is **ab97051**, a goat anti-rabbit IgG (H&L) at a dilution of 1/500. The sample is counter-stained with hematoxylin. Antigen retrieval was perfomed using Tris-EDTA buffer, pH 9.0. PBS was used instead of the primary antibody as the negative control, and is shown in the inset.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (**ab115730**).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Glucose Transporter GLUT1 antibody [EPR3915] - Low endotoxin, Azide free (ab196357)

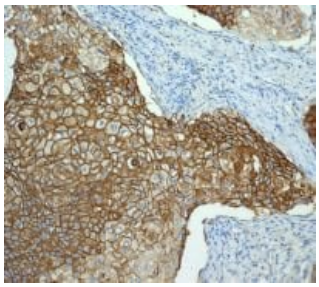
Immunohistochemical staining of paraffin embedded human cervical carcinoma with purified **ab115730** at a working dilution of 1/500. The secondary antibody used is **ab97051**, a goat anti-rabbit IgG (H&L) at a dilution of 1/500. The sample is counter-stained with hematoxylin. Antigen retrieval was perfomed using Tris-EDTA buffer, pH 9.0. PBS was used instead of the primary antibody as the negative control, and is shown in the inset.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (**ab115730**).



Flow Cytometry (Intracellular) - Anti-Glucose Transporter GLUT1 antibody [EPR3915] - Low endotoxin, Azide free (ab196357)

Overlay histogram showing HeLa cells stained with unpurified **ab115730** (red line). The cells were fixed with 80% methanol (5 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 (**ab115730**, 1/1000 dilution) for 30 min at 22°C. The secondary antibody used was Alexa Fluor® 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) (1µg/1x10^6 cells) used under the same conditions. Unlabelled sample (blue line) was also used as a control. Acquisition of >5,000 events were collected using a 20mW Argon ion laser (488nm) and 525/30 bandpass filter. This antibody gave a positive signal in HeLa cells fixed with 4% paraformaldehyde (10 min)/permeabilized with 0.1% PBS-Tween for 20 min used under the same conditions.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (**ab115730**).

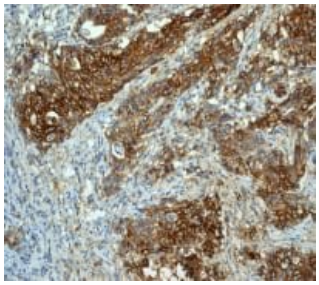


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Glucose Transporter GLUT1 antibody [EPR3915] - Low endotoxin, Azide free (ab196357)

Unpurified **ab115730** at 1/250 dilution staining Glucose Transporter GLUT1 in Paraffin-embedded human cervical carcinoma tissue by Immunohistochemistry.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (**ab115730**).

Perform heat mediated antigen retrieval before commencing with IHC staining protocol.

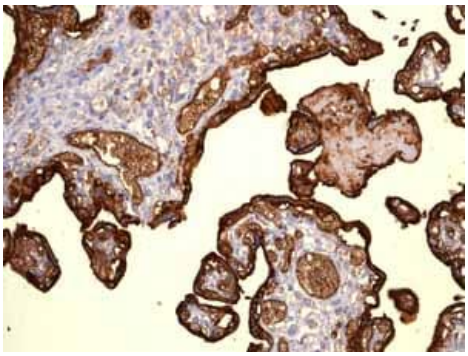


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Glucose Transporter GLUT1 antibody [EPR3915] - Low endotoxin, Azide free (ab196357)

Unpurified **ab115730** at 1/250 dilution staining Glucose Transporter GLUT1 in Paraffin-embedded human colonic adenocarcinoma tissue by Immunohistochemistry.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (**ab115730**).

Perform heat mediated antigen retrieval before commencing with IHC staining protocol.

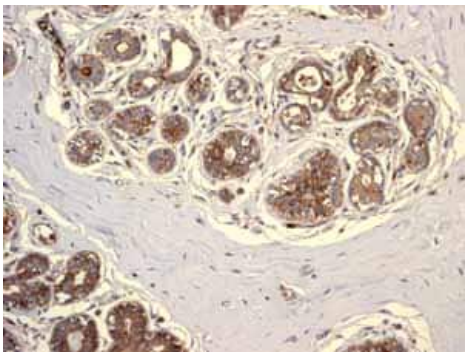


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Glucose Transporter GLUT1 antibody [EPR3915] - Low endotoxin, Azide free (ab196357)

Unpurified **ab115730** showing positive staining in normal liver tissue.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (**ab115730**).

Perform heat mediated antigen retrieval before commencing with IHC staining protocol.

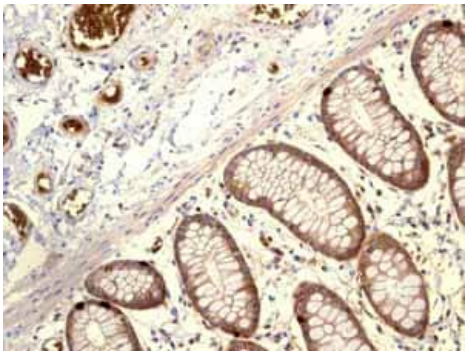


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Glucose Transporter GLUT1 antibody [EPR3915] - Low endotoxin, Azide free (ab196357)

Unpurified **ab115730** showing positive staining in normal breast tissue.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (**ab115730**).

Perform heat mediated antigen retrieval before commencing with IHC staining protocol.

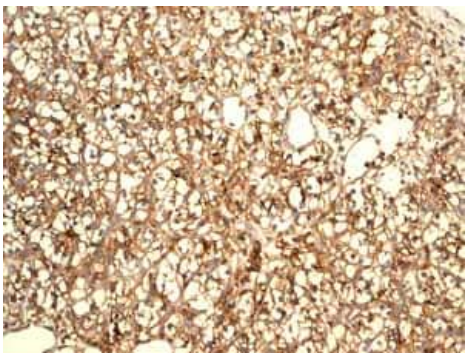


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Glucose Transporter GLUT1 antibody [EPR3915] - Low endotoxin, Azide free (ab196357)

Unpurified **ab115730** showing positive staining in normal colon tissue.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (**ab115730**).

Perform heat mediated antigen retrieval before commencing with IHC staining protocol.

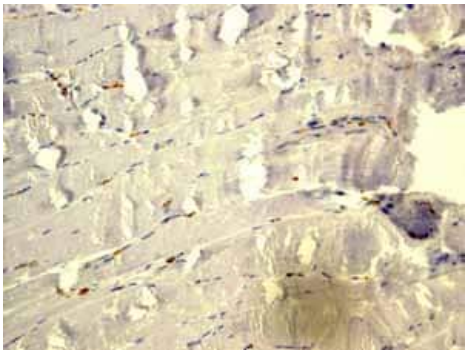


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Glucose Transporter GLUT1 antibody [EPR3915] - Low endotoxin, Azide free (ab196357)

Unpurified **ab115730** showing positive staining in kidney carcinoma tissue.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (**ab115730**).

Perform heat mediated antigen retrieval before commencing with IHC staining protocol.

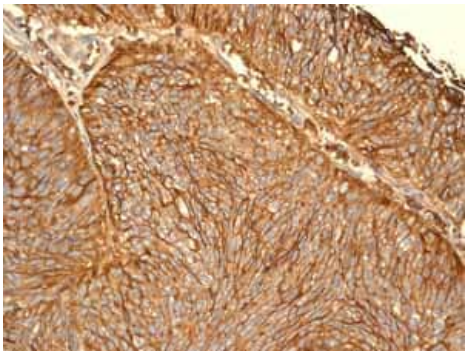


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Glucose Transporter GLUT1 antibody [EPR3915] - Low endotoxin, Azide free (ab196357)

Unpurified **ab115730** showing negative staining in skeletal muscle tissue.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (**ab115730**).

Perform heat mediated antigen retrieval before commencing with IHC staining protocol.

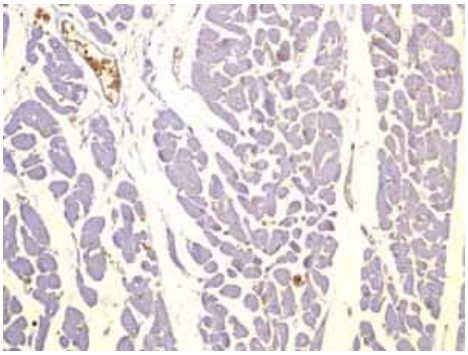


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Glucose Transporter GLUT1 antibody [EPR3915] - Low endotoxin, Azide free (ab196357)

Unpurified **ab115730** showing positive staining in urinary bladder transitional carcinoma tissue.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (**ab115730**).

Perform heat mediated antigen retrieval before commencing with IHC staining protocol.

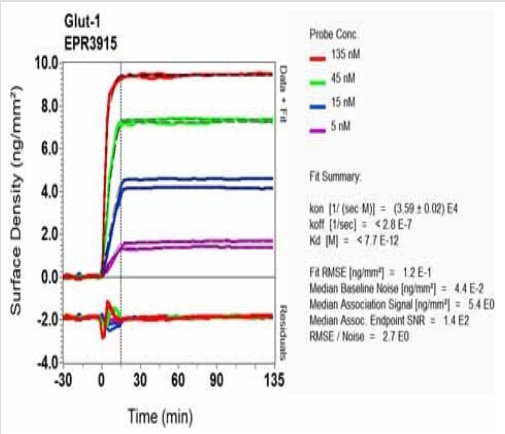


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Glucose Transporter GLUT1 antibody [EPR3915] - Low endotoxin, Azide free (ab196357)

Unpurified **ab115730** showing negative staining in normal heart tissue.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (**ab115730**).

Perform heat mediated antigen retrieval before commencing with IHC staining protocol.



OI-RD Scanning - Anti-Glucose Transporter GLUT1 antibody [EPR3915] - Low endotoxin, Azide free (ab196357)

Equilibrium disassociation constant (K_D)

Learn more about K_D

Click here to learn more about K_D

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (**ab115730**).

Anti-Glucose Transporter GLUT1 antibody [EPR3915] - Low endotoxin, Azide free (ab196357)

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