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Anti-SLC2A1 Antibody Picoband™ (monoclonal, 10C10)

Catalog # ABO14859

Product Information

Application	WB, IHC, IF, ICC, FC
Primary Accession	P11166
Host	Mouse
Isotype	Mouse IgG1
Reactivity	Human
Clonality	Monoclonal
Format	Lyophilized
Description	Anti-SLC2A1 Antibody Picoband™ (monoclonal, 10C10) . Tested in Flow Cytometry, IF, IHC, ICC, WB applications. This antibody reacts with Human.
Reconstitution	Add 0.2ml of distilled water will yield a concentration of 500 □g/ml.

Additional Information

Gene ID	6513
Other Names	Solute carrier family 2, facilitated glucose transporter member 1, Glucose transporter type 1, erythrocyte/brain, GLUT-1, HepG2 glucose transporter, SLC2A1 (HGNC:11005)
Calculated MW	54084
Application Details	Western blot, 0.1-0.5 □g/ml Immunohistochemistry (Paraffin-embedded Section), 0.5-1 □g/ml Immunocytochemistry/Immunofluorescence, 5 □g/ml Flow Cytometry, 1-3 □g/1x10^6 cells
Subcellular Localization	Cell membrane. Multi-pass membrane protein. Melanosome.
Tissue Specificity	Detected in erythrocytes (at protein level). Expressed at variable levels in many human tissues.
Source	Eukaryota
Contents	Each vial contains 4mg Trehalose, 0.9mg NaCl, 0.2mg Na2HPO4, 0.05mg NaN3.
Clone Names	Clone: 10C10
Immunogen	E.coli-derived human SLC2A1 recombinant protein (Position: R92-V492). Human SLC2A1 shares 98% and 98.3% amino acid (aa) sequence identity with mouse and rat SLC2A1, respectively.
Cross Reactivity	No cross-reactivity with other proteins.

Storage	Store at -20˚C for one year from date of receipt. After reconstitution, at 4˚C for one month. It can also be aliquotted and stored frozen at -20˚C for six months. Avoid repeated freeze-thaw cycles.

Protein Information

Name	SLC2A1 (HGNC:11005)
Function	Facilitative glucose transporter, which is responsible for constitutive or basal glucose uptake (PubMed:10227690, PubMed:10954735, PubMed:18245775, PubMed:19449892, PubMed:25982116, PubMed:27078104, PubMed:32860739). Has a very broad substrate specificity; can transport a wide range of aldoses including both pentoses and hexoses (PubMed:18245775, PubMed:19449892). Most important energy carrier of the brain: present at the blood-brain barrier and assures the energy-independent, facilitative transport of glucose into the brain (PubMed:10227690). In association with BSG and NXNL1, promotes retinal cone survival by increasing glucose uptake into photoreceptors (By similarity). Required for mesendoderm differentiation (By similarity).
Cellular Location	Cell membrane; Multi-pass membrane protein. Melanosome. Photoreceptor inner segment {ECO:0000250|UniProtKB:P17809}. Note=Localizes primarily at the cell surface (PubMed:18245775, PubMed:19449892, PubMed:23219802, PubMed:24847886, PubMed:25982116). Identified by mass spectrometry in melanosome fractions from stage I to stage IV (PubMed:17081065)
Tissue Location	Detected in erythrocytes (at protein level). Expressed at variable levels in many human tissues

Background

GLUT1, also known as SLC2A1, is a major glucose transporter in the mammalian blood-brain barrier whose gene is mapped to 1p35-p31.3 and contains 10 exons. It is present at high levels in primate erythrocytes and brain endothelial cells. Not only can transport dehydroascorbic acid (the oxidized form of vitamin C) into the brain, GLUT1 is also likely to contribute to HTLV-associated disorders through interacting with HTLV envelope glycoproteins. Functionally, GLUT1 deficiency causes a decrease in embryonic glucose uptake and apoptosis, which may be involved in diabetic embryopathy, by contrast, an increased expression of GLUT1 in some malignant tumors may suggest a role for glucose-derivative tracers to detect in vivo thyroid cancer metastases by positron-emission tomography scanning.

Images

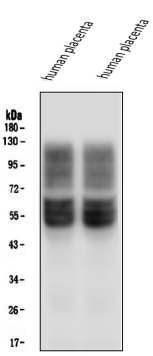


Figure 1. Western blot analysis of SLC2A1 using anti-SLC2A1 antibody (M00163-1).
Electrophoresis was performed on a 5-20% SDS-PAGE gel at 70V (Stacking gel) / 90V (Resolving gel) for 2-3 hours.
The sample well of each lane was loaded with 50ug of sample under reducing conditions.
Lane 1: human placenta tissue lysates,
Lane 2: human placenta tissue lysates.
After Electrophoresis, proteins were transferred to a Nitrocellulose membrane at 150mA for 50-90 minutes.
Blocked the membrane with 5% Non-fat Milk/ TBS for 1.5 hour at RT. The membrane was incubated with mouse anti-SLC2A1 antigen affinity purified monoclonal antibody (Catalog # M00163-1) at 0.5 µg/mL overnight at 4°C, then

washed with TBS-0.1%Tween 3 times with 5 minutes each and probed with a goat anti-mouse IgG-HRP secondary antibody at a dilution of 1:10000 for 1.5 hour at RT. The signal is developed using an Enhanced Chemiluminescent detection (ECL) kit (Catalog # EK1001) with Tanon 5200 system. A specific band was detected for SLC2A1 at approximately 55KD. The expected band size for SLC2A1 is at 55KD.

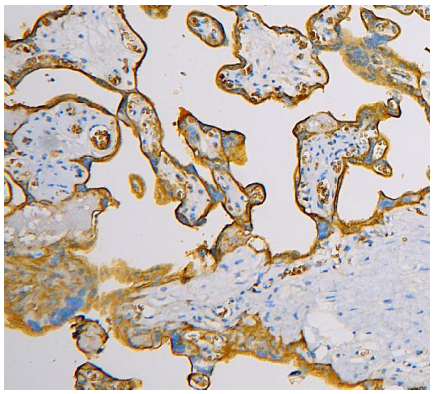


Figure 2. IHC analysis of SLC2A1 using anti-SLC2A1 antibody (M00163-1).
SLC2A1 was detected in paraffin-embedded section of human placenta tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 1 µg/ml mouse anti-SLC2A1 Antibody (M00163-1) overnight at 4°C. Biotinylated goat anti-mouse IgG was used as secondary antibody and incubated for 30 minutes at 37°C. The tissue section was developed using Strepavidin-Biotin-Complex (SABC) (Catalog # SA1021) with DAB as the chromogen.

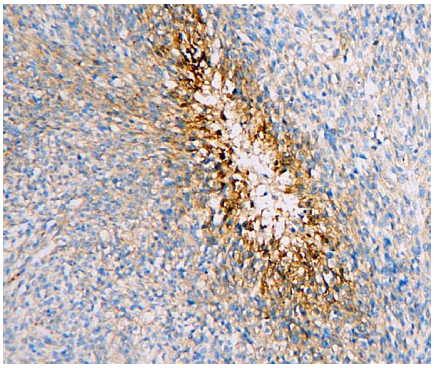


Figure 3. IHC analysis of SLC2A1 using anti-SLC2A1 antibody (M00163-1).
SLC2A1 was detected in paraffin-embedded section of human renal cancer tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 1 µg/ml mouse anti-SLC2A1 Antibody (M00163-1) overnight at 4°C. Biotinylated goat anti-mouse IgG was used as secondary antibody and incubated for 30 minutes at 37°C. The tissue section was developed using Strepavidin-Biotin-Complex (SABC) (Catalog # SA1021) with DAB as the chromogen.

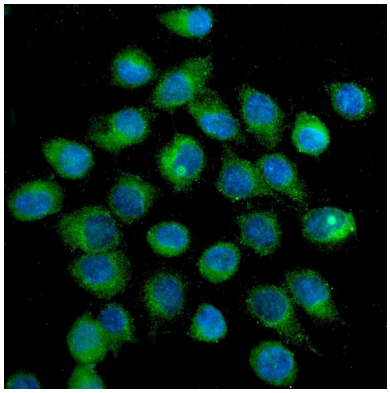
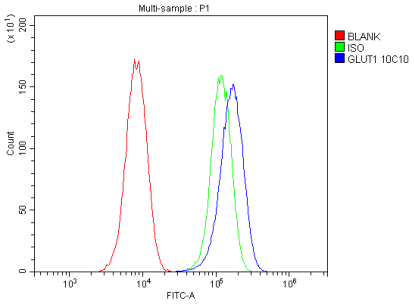


Figure 4. IF analysis of SLC2A1 using anti-SLC2A1 antibody (M00163-1).
SLC2A1 was detected in immunocytochemical section of SiHa cells. Enzyme antigen retrieval was performed using IHC enzyme antigen retrieval reagent (AR0022) for 15 mins. The cells were blocked with 10% goat serum. And then incubated with 5 µg/mL mouse anti-SLC2A1 Antibody (M00163-1) overnight at 4°C. DyLight®488 Conjugated Goat Anti-Mouse IgG (BA1126) was used as secondary antibody at 1:100 dilution and incubated for 30 minutes at 37°C. The section was counterstained with DAPI. Visualize using a fluorescence microscope and filter sets appropriate for the label used.

Figure 5. Flow Cytometry analysis of U20S cells using anti-SLC2A1 antibody (M00163-1).
Overlay histogram showing U20S cells stained with M00163-1 (Blue line).The cells were blocked with 10% normal goat serum. And then incubated with mouse anti-SLC2A1 Antibody (M00163-1, 1 µg/1x10^6 cells) for 30 min at 20°C. DyLight®488 conjugated goat anti-mouse IgG (BA1126, 5-10 µg/1x10^6 cells) was used as secondary



antibody for 30 minutes at 20°C. Isotype control antibody (Green line) was mouse IgG (1 µg/1x10^6) used under the same conditions. Unlabelled sample (Red line) was also used as a control.

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