abcam

ab289637

Anti-SLC5A7 antibody [EPR25152-16] - BSA and Azide free

Recombinant | RabMAb

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Carrier free	Yes
Clone number	EPR25152-16
Purification technique	Affinity purification Protein A
Concentration	1.015 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

ICC/IF

Tested

Species	Mouse, Human
Dilution info	-

Notes	-

Not recommended

Species	Rat
Dilution info	-
Notes	-

WB

Tested

Species	Mouse, Human
Dilution info	-
Notes	-

Not recommended

Species	Rat
Dilution info	-
Notes	-

IHC-P

Not recommended

Species	Mouse, Rat, Human
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Mouse, Human
Dilution info	-
Notes	-

Not recommended

Species	Rat
Dilution info	-
Notes	-

Target data

See full target information SLC5A7

Function	High-affinity Na(+)-coupled choline transmembrane symporter (PubMed:11027560, PubMed:11068039, PubMed:12237312, PubMed:12969261, PubMed:17005849, PubMed:23132865, PubMed:23141292, PubMed:27569547). Functions as an electrogenic, voltage-dependent transporter with variable charge/choline stoichiometry (PubMed:17005849). Choline uptake and choline-induced current is also Cl(-)-dependent where Cl(-) is likely a regulatory ion rather than cotransported ion (PubMed:11068039, PubMed:12237312, PubMed:17005849). Plays a critical role in acetylcholine (ACh) synthesis by taking up the substrate choline from the synaptic cleft into the presynaptic nerve terminals after neurotransmitter release (PubMed:27569547). SLC5A7/CHT1-mediated choline high-affinity transport in cholinergic neurons is the rate-limiting step for production of ACh, thereby facilitating communication by subsequent action potentials (PubMed:11027560). Localized predominantly in presynaptic terminal intracellular organelles, and translocated to the plasma membrane in active form in response to neuronal activity (PubMed:12969261, PubMed:15953352).

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	+4°C

Notes

ab289637 is a carrier-free version of ab289635.

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.

Conjugation ready
Our carrier-free antibodies are typically supplied in a PBS-only formulation, purified and free of BSA, sodium azide and glycerol. 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.

Compatibility
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.

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	SLC5A7 also known as the choline transporter-like protein 1 (CHT1) functions as a sodium-dependent high-affinity choline transporter. This transporter has a mass of around 68 kDa and is part of the solute carrier family 5. SLC5A7 mainly expresses in the nervous system especially in cholinergic neurons. It plays a critical role in the uptake of choline into these neurons which is essential for subsequent acetylcholine synthesis.
Biological function summary	SLC5A7 is integral to the production and storage of acetylcholine an important neurotransmitter involved in synaptic transmission. It does not function as part of any larger known protein complex but stands alone as a transporter. Acetylcholine is essential for normal cognitive function neuromuscular junction operation and autonomic nervous system regulation. The ability of SLC5A7 to transport choline directly influences the availability of acetylcholine making it a significant element in neurotransmission processes.
Pathways	SLC5A7 plays a major role in the cholinergic signaling pathway. It connects very closely with the enzyme choline acetyltransferase which catalyzes the synthesis of acetylcholine from choline. Another relevant pathway is the acetylcholine biosynthetic pathway where SLC5A7 regulates choline availability. The choline taken up by SLC5A7 becomes acetylcholine linking it functionally to these pathways and emphasizing its importance in choline metabolism and neurotransmitter synthesis.
Associated diseases and disorders	Disruptions in SLC5A7 function connect with various neurological conditions such as congenital myasthenic syndrome and Alzheimer's disease. Congenital myasthenic syndrome can arise from mutations affecting SLC5A7 leading to impaired acetylcholine availability at the neuromuscular junction causing muscle weakness. In Alzheimer's disease reduced cholinergic function partly due to impaired SLC5A7 activity has been observed. SLC5A7 also interacts with

components like vesicular acetylcholine transporter within the disease context highlighting its significance in maintaining normal neuronal function and integrity.

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

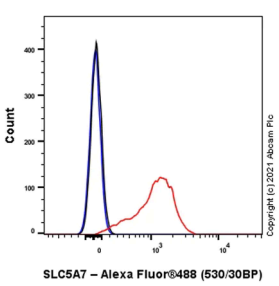
We do not recommend this combination. It is not covered by our product promise.

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.

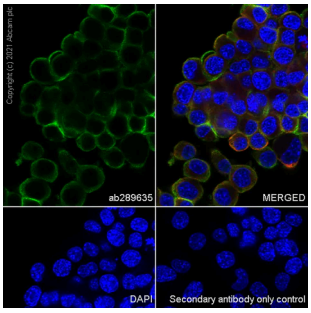
8 product images



Flow Cytometry (Intracellular) - Anti-SLC5A7 antibody [EPR25152-16] - BSA and Azide free (ab289637)

SLC5A7 Flow Cytometry (Intracellular) staining using rabbit Anti-SLC5A7 antibody

This data was developed using ab289635, the same antibody clone in a different buffer formulation.
Flow cytometric analysis of 4% paraformaldehyde-fixed, 90% methanol permeabilized SH-SY5Y (Human neuroblastoma epithelial cell line) cells labeling SLC5A7 with ab289635 at 1/500 dilution (Red) compared with Rabbit monoclonal IgG (ab172730) isotype control (Black) and an unlabelled control (cells without incubation with primary antibody and secondary antibody) (Blue). Goat Anti-Rabbit IgG (Alexa Fluor® 488, ab150081) was used as secondary antibody at 1/2000 dilution.

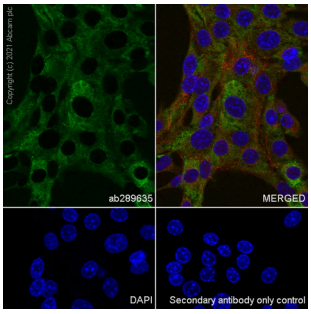


Immunocytochemistry/ Immunofluorescence - Anti-SLC5A7 antibody [EPR25152-16] - BSA and Azide free (ab289637)

SLC5A7 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-SLC5A7 antibody

This data was developed using ab289635, the same antibody clone in a different buffer formulation.
Immunofluorescent analysis of 4% paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized SH-SY5Y cells labeling SLC5A7 with ab289635 at 1/50 dilution, followed by ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed secondary antibody at 1/1000 dilution (Green). Confocal image showing cytoplasmic staining in SH-SY5Y cell line. The nuclear counterstain is DAPI (Blue). Tubulin is labeled using ab195889 Anti-alpha Tubulin mouse monoclonal antibody - Microtubule Marker (Alexa Fluor® 594) at 1/200 dilution (Red).

Secondary antibody only control: Used PBS instead of primary antibody, followed by ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed secondary antibody at 1/1000 dilution.

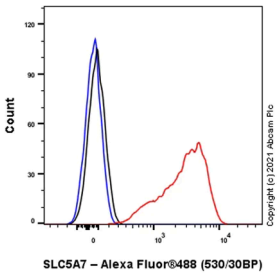


Immunocytochemistry/ Immunofluorescence - Anti-SLC5A7 antibody [EPR25152-16] - BSA and Azide free (ab289637)

SLC5A7 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-SLC5A7 antibody

This data was developed using ab289635, the same antibody clone in a different buffer formulation.
Immunofluorescent analysis of 4% paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized C8-D1A cells labeling SLC5A7 with ab289635 at 1/50 dilution, followed by ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed secondary antibody at 1/1000 dilution (Green). Confocal image showing cytoplasmic staining in C8-D1A cell line. The nuclear counterstain is DAPI (Blue). Tubulin is labeled using ab195889 Anti-alpha Tubulin mouse monoclonal antibody - Microtubule Marker (Alexa Fluor® 594) at 1/200 dilution (Red).

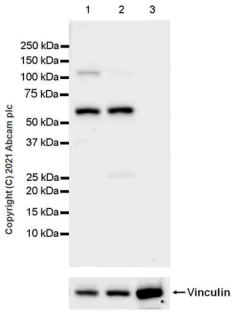
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Flow Cytometry (Intracellular) - Anti-SLC5A7 antibody [EPR25152-16] - BSA and Azide free (ab289637)

SLC5A7 Flow Cytometry (Intracellular) staining using rabbit Anti-SLC5A7 antibody

This data was developed using ab289635, the same antibody clone in a different buffer formulation.
Flow cytometric analysis of 4% paraformaldehyde-fixed, 90% methanol permeabilized C8-D1A (Mouse brain astrocyte cell line) cells labeling SLC5A7 with ab289635 at 1/500 dilution (Red) compared with Rabbit monoclonal IgG (ab172730) isotype control (Black) and an unlabelled control (cells without incubation with primary antibody and secondary antibody) (Blue). Goat Anti-Rabbit IgG (Alexa Fluor® 488, ab150081) was used as secondary antibody at 1/2000 dilution.



Western blot - Anti-SLC5A7 antibody [EPR25152-16] - BSA and Azide free (ab289637)

SLC5A7 Western blot staining using rabbit Anti-SLC5A7 antibody

This data was developed using ab289635, the same antibody clone in a different buffer formulation.
5% NFDM/TBST was used as a blocking and concentration buffer.

Samples are non-boiled as boiling may cause protein aggregates.
The molecular weight observed is consistent with what has been described in the literature (PMID: 10649566).

All lanes:
Western blot - Anti-SLC5A7 antibody [EPR25152-16] (ab289635) at 1/1000 dilution

Lane 1:
Human cerebellum tissue lysate at 20 µg

Lane 2:
Human spinal cord tissue lysate at 20 µg

Lane 3:
Human liver tissue lysate at 40 µg

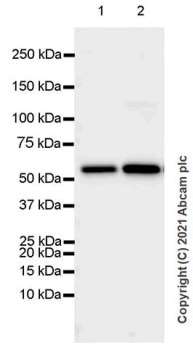
Secondary

All lanes:
Goat Anti-Rabbit IgG (HRP) with minimal cross-reactivity with human IgG at 1/5000 dilution

Predicted band size: 63 kDa

Observed band size: 120 kDa, 63 kDa

Exposure time: 15s



Western blot - Anti-SLC5A7 antibody [EPR25152-16] - BSA and Azide free (ab289637)

SLC5A7 Western blot staining using rabbit Anti-SLC5A7 antibody

This data was developed using ab289635, the same antibody clone in a different buffer formulation.
Samples are non-boiled as boiling may cause protein aggregates.

5% NFDM/TBST was used as a blocking and dilution buffer.

All lanes:
Western blot - Anti-SLC5A7 antibody [EPR25152-16] (ab289635) at 1/1000 dilution

Lane 1:
SH-SY5Y (human neuroblastoma epithelial cell) whole cell lysate at 20 µg

Lane 2:
A-172 (human brain glioblastoma) whole cell lysate at 20 µg

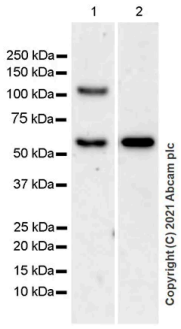
Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/200000 dilution

Predicted band size: 63 kDa

Observed band size: 63 kDa

Exposure time: 10s



Western blot - Anti-SLC5A7 antibody [EPR25152-16] - BSA and Azide free (ab289637)

SLC5A7 Western blot staining using rabbit Anti-SLC5A7 antibody

This data was developed using ab289635, the same antibody clone in a different buffer formulation.
Lysate was made freshly and used in WB test immediately to minimize protein degradation.
The molecular weight observed is consistent with what has been described in the literature (PMID: 10649566).

5% NFDM/TBST was used as a blocking and dilution buffer.

All lanes:
Western blot - Anti-SLC5A7 antibody [EPR25152-16] (ab289635) at 1/1000 dilution

Lane 1:
C6 (Rat glial tumor glial cell) whole cell lysate at 20 µg

Lane 2:
Neuro-2a (Mouse neuroblastoma neuroblast) whole cell lysate at 20 µg

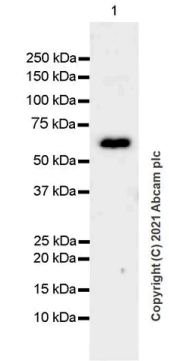
Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/100000 dilution

Predicted band size: 63 kDa

Observed band size: 120 kDa, 63 kDa

Exposure time: 3min



Western blot - Anti-SLC5A7 antibody [EPR25152-16] - BSA and Azide free (ab289637)

SLC5A7 Western blot staining of C8-D1A (Mouse brain astrocyte) whole cell lysate using rabbit Anti-SLC5A7 antibody

This data was developed using ab289635, the same antibody clone in a different buffer formulation.
5% NFDM/TBST was used as a blocking and dilution buffer.

Lysate was made freshly and used in WB test immediately to minimize protein degradation.

All lanes:
Western blot - Anti-SLC5A7 antibody [EPR25152-16] (ab289635) at 1/1000 dilution

All lanes:
C8-D1A (Mouse brain astrocyte) whole cell lysate at 20 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/100000 dilution

Predicted band size: 63 kDa

Observed band size: 63 kDa

Exposure time: 59s

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