abcam

ab182023

Anti-ENT1 antibody [SP120]

Recombinant | RabMAb | KO Validated

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.6 Preservative: 0.1% Sodium azide Constituents: PBS, 1% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	SP120
Purification technique	Affinity purification Protein A/G
Purification notes	Purified from TCS by protein A/G.

Reactivity data

ICC

Tested

Species	Human
Dilution info	1/200
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
Notes	-

WB

Tested

Species	Human
Dilution info	1/1000
Notes	-

IHC-P

Tested

Species	Human
Dilution info	1/100
Notes	Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Target data

See full target information SLC29A1

Function

Uniporter involved in the facilitative transport of nucleosides and nucleobases, and contributes to maintaining their cellular homeostasis (PubMed:10722669, PubMed:10755314, PubMed:12527552, PubMed:14759222, PubMed:15037197, PubMed:17379602, PubMed:21795683, PubMed:26406980, PubMed:27995448, PubMed:35790189, PubMed:8986748). Functions as a Na(+)-independent transporter (PubMed:8986748). Involved in the transport of nucleosides such as adenosine, guanosine, inosine, uridine, thymidine and cytidine (PubMed:10722669, PubMed:10755314, PubMed:12527552, PubMed:14759222, PubMed:15037197, PubMed:17379602, PubMed:26406980, PubMed:8986748). Also transports purine nucleobases (hypoxanthine, adenine, guanine) and pyrimidine nucleobases (thymine, uracil) (PubMed:21795683, PubMed:27995448). Mediates basolateral nucleoside uptake into Sertoli cells, thereby regulating the transport of nucleosides in testis across the blood-testis barrier (By similarity). Regulates inosine levels in brown adipocytes tissues (BAT) and extracellular inosine levels, which controls BAT-dependent energy expenditure (PubMed:35790189).

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

Notes

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	ENT1 also known as Equilibrative Nucleoside Transporter 1 or SLC29A1 is a membrane protein responsible for transporting nucleosides across cell membranes. This protein weighs approximately 55 kDa and is expressed in various tissues including the brain heart and liver. The transport activity of ENT1 plays a fundamental role in maintaining cellular nucleoside levels. The efficient transport mechanisms of ENT1 highlight its significance in regulating the availability of substrates for nucleic acid synthesis.
Biological function summary	This transporter facilitates the uptake and recycling of nucleosides which are essential building blocks for DNA and RNA synthesis. ENT1 mediates the transport of adenosine an important nucleoside involved in multiple cellular functions. It operates as a component of a broader transport system that includes similar proteins like ENT2. This action contributes to cellular processes by controlling nucleoside concentrations impacting cell proliferation and metabolic activities.

Pathways	ENT1 plays a role in the purine salvage pathway and adenosine signaling. It regulates extracellular adenosine levels influencing adenosine receptor-mediated pathways that impact many physiological functions. ENT1 coordinates with proteins such as adenosine kinases to manage the intracellular balance of adenosine therefore integrating into both metabolic and signaling routes. Its role in these pathways affects energy metabolism and supports cellular responses to stress.
Associated diseases and disorders	ENT1 has been associated with conditions such as cardiovascular diseases and neurological disorders. Altered ENT1 activity can affect adenosine levels leading to variations in blood flow and neurotransmission. In cardiovascular diseases ENT1 modulates adenosine's cardioprotective effects. In neurological contexts dysfunction of ENT1 relates to disorders involving adenosine receptor signaling where its interaction with proteins like ADA (adenosine deaminase) can influence disease progression.

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

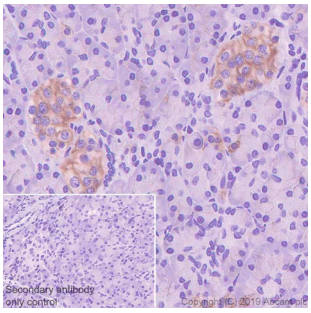
We do not recommend this combination. It is not covered by our product promise.

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.

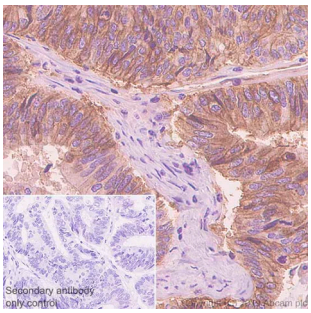
7 product images



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-ENT1 antibody [SP120] (ab182023)

ENT1 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-ENT1 antibody

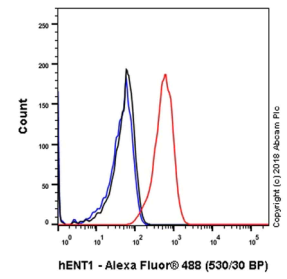
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of Human pancreas tissue sections labeling ENT1 with Purified ab182023 at 1/100 dilution (0.77 µg/ml). Heat mediated antigen retrieval was performed Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution 2) for 20mins. Rabbit specific IHC polymer detection kit HRP/DAB (ab209101) was used as the secondary antibody. Negative control: PBS instead of the primary antibody. Hematoxylin was used as a counterstain.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-ENT1 antibody [SP120] (ab182023)

ENT1 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-ENT1 antibody

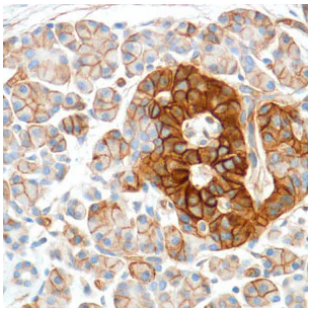
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of Human colon carcinoma tissue sections labeling ENT1 with Purified ab182023 at 1/100 dilution (0.77 µg/ml). Heat mediated antigen retrieval was performed Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution 2) for 20mins. Rabbit specific IHC polymer detection kit HRP/DAB (ab209101) was used as the secondary antibody. Negative control: PBS instead of the primary antibody. Hematoxylin was used as a counterstain.



Flow Cytometry (Intracellular) - Anti-ENT1 antibody [SP120] (ab182023)

ENT1 Flow Cytometry (Intracellular) staining using rabbit Anti-ENT1 antibody

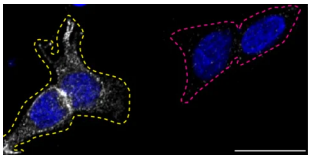
Flow Cytometry analysis of HepG2 (Human hepatocellular carcinoma epithelial cell) cells labeling ENT1 with purified ab182023 at (red). Cells were fixed with 4% paraformaldehyde and permeabilised with 90% methanol. A Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) was used as the secondary antibody. Isotype control - Rabbit monoclonal IgG (ab172730) / Black. Unlabeled control - Unlabelled cells / blue.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-ENT1 antibody [SP120] (ab182023)

ENT1 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-ENT1 antibody

Immunohistochemical analysis of formalin-fixed paraffin-embedded Human pancreas tissue labeling ENT1 with ab182023.

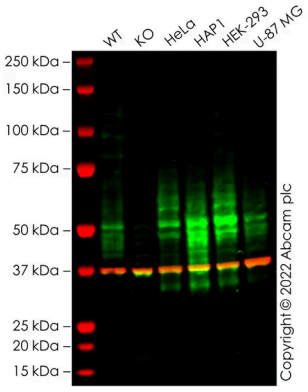


Immunocytochemistry - Anti-ENT1 antibody [SP120] (ab182023)

ENT1 Immunocytochemistry staining using rabbit Anti-ENT1 antibody

ab182023 was shown to react with SLC29A1 in wild-type HAP1 cells in Immunocytochemistry with loss of signal observed in a SLC29A1 knockout cell line. Wild-type and knockout cells were mixed

and pelleted at a 1:1 ratio on coverslips. The cells were fixed with 4% paraformaldehyde (15 min) then permeabilized with 0.1% Triton X-100 (10min) and then blocked with . The cells were then incubated with ab182023 at 1/200 dilution overnight at 4°C followed by a further incubation at room temperature for 1h with a goat anti-rabbit secondary antibody to (Alexa Fluor® 555) at 0.5 µg/ml. Acquisition of the green (wild-type), red (antibody staining) and far-red (knockout) channels was performed. Representative grayscale images of the red channel are shown. Wild-type and knockout cells are outlined with yellow and magenta dashed line, respectively. Schematic representation of the mosaic strategy used is shown on the bottom-right panel. Image was acquired with a Zeiss(LSM-880). These data were provided by YCharOS Inc., an open science company with the mission of characterizing commercially available antibody reagents for all human proteins. Abcam and YCharOS are working together to help address the reproducibility crisis by enabling the life science community to better evaluate commercially available antibodies.



Western blot - Anti-ENT1 antibody [SP120] (ab182023)

ENT1 Western blot staining using rabbit Anti-ENT1 antibody

False colour image of Western blot: Anti-ENT1 antibody [SP120] staining at 1/1000 dilution, shown in green; Mouse anti-GAPDH antibody [6C5] (ab8245) loading control staining at 1/20000 dilution, shown in red. In Western blot, ab182023 was shown to bind specifically to ENT1. A band was observed at 40-60 kDa in wild-type HEK-293T cell lysates with no signal observed at this size in SLC29A1 knockout cell line (ab266758). To generate this image, wild-type and SLC29A1 knockout HEK-293T cell lysates were analysed. First, samples were run on an SDS-PAGE gel then transferred onto a nitrocellulose membrane. Membranes were blocked in 3 % milk in TBS-0.1 % Tween® 20 (TBS-T) before incubation with primary antibodies overnight at 4 °C. Blots were washed four times in TBS-T, incubated with secondary antibodies for 1 h at room temperature, washed again four times then imaged. Secondary antibodies used were Goat anti-Rabbit IgG H&L 800CW and Goat anti-Mouse IgG H&L 680RD at 1/20000 dilution.
All lanes:
Western blot - Anti-ENT1 antibody [SP120] (ab182023) at 1/1000 dilution

Lane 1:
Wild-type HEK-293T cell lysate at 20 µg

Lane 2:
SLC29A1 knockout HEK-293T cell lysate at 20 µg

Lane 3:
HeLa cell lysate at 20 µg

Lane 4:
HAP1 cell lysate at 20 µg

Lane 5:
HEK-293 cell lysate at 20 µg

Lane 6:
U-87 MG cell lysate at 20 µg

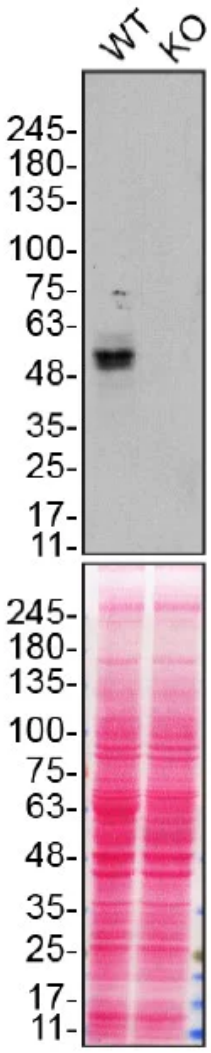
Secondary

Lanes 1 - 6:
Goat anti-Rabbit IgG H&L 800CW at 1/20000 dilution

Lanes 1 - 6:
Goat anti-Mouse IgG H&L 680RD at 1/20000 dilution

Performed under reducing conditions.

Observed band size: 40-60 kDa



Western blot - Anti-ENT1 antibody [SP120] (ab182023)

ENT1 Western blot staining using rabbit Anti-ENT1 antibody

ab182023 was shown to react with SLC29A1 in wild-type HAP1 cells in Western blot with loss of signal observed in a SLC29A1 knockout cell line. Wild-type HAP1 and SLC29A1 knockout cell lysates were subjected to SDS-PAGE. Membranes were blocked in 5% milk in TBST for 1 hr before incubation with ab182023 overnight at 4 °C at a 1/1000 dilution. Blots were incubated with goat anti-rabbit HRP secondary antibodies at 0.2ug/mL before imaging. These data were provided by YCharOS Inc., an open science company with the mission of characterizing commercially available antibody reagents for all human proteins. Abcam and YCharOS are working together to help address the reproducibility crisis by enabling the life science community to better evaluate commercially available antibodies.
All lanes:
Western blot - Anti-ENT1 antibody [SP120] (ab182023) at 1/1000 dilution

Lane 1:
Wild-type HAP1 cell lysate at 20 µg

Lane 2:
SLC29A1 knockout HAP1 cell lysate at 20 µg

Performed under reducing conditions.

Predicted band size: 50 kDa

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