abcam

ab315024

Anti-Transaldolase 1 antibody [EPR28140-51] - 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	EPR28140-51
Purification technique	Affinity purification Protein A
Concentration	0.998 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

WB

Tested

Species	Human, Mouse, Rat
Dilution info	-

Notes	-

IP

Tested

Species	Human, Mouse, Rat
Dilution info	-
Notes	-

IHC-P

Tested

Species	Human, Mouse, Rat
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Human, Mouse, Rat
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human, Mouse
Dilution info	-
Notes	-

Expected

Species	Rat
Dilution info	Use at an assay dependent concentration.

Notes	-

Target data

See full target information TALDO1

Function	Catalyzes the rate-limiting step of the non-oxidative phase in the pentose phosphate pathway. Catalyzes the reversible conversion of sedheptulose-7-phosphate and D-glyceraldehyde 3-phosphate into erythrose-4-phosphate and beta-D-fructose 6-phosphate (PubMed:18687684, PubMed:8955144). Not only acts as a pentose phosphate pathway enzyme, but also affects other metabolite pathways by altering its subcellular localization between the nucleus and the cytoplasm (By similarity).

Storage

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

Notes

ab315024 is the carrier-free version of ab315023.

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	Transaldolase 1 also known as TALDO1 or TAL-H is an enzyme that plays an important role in the pentose phosphate pathway by catalyzing the transfer of a three-carbon dihydroxyacetone unit from sedoheptulose 7-phosphate to glyceraldehyde 3-phosphate producing erythrose 4-phosphate and fructose 6-phosphate. The molecular mass of Transaldolase 1 is approximately 37 kDa. It is expressed in various tissues within the body with higher expression levels observed in the liver and adipose tissues.
Biological function summary	Transaldolase 1 regulates the balance between the oxidative and non-oxidative branches of the pentose phosphate pathway essential for nucleotide biosynthesis and maintaining cellular redox status. It functions independently not as part of a larger enzyme complex. The activity of this enzyme affects cellular metabolic functions impacting the synthesis of nucleotides and pentose sugars which are necessary for cell growth and division.
Pathways	Transaldolase 1 is integral to the pentose phosphate pathway also known as the hexose monophosphate shunt. This pathway is important for providing ribose-5-phosphate for nucleotide synthesis and NADPH for reductive biosynthesis and cellular antioxidant systems. It links with glycolysis through shared intermediates such as fructose 6-phosphate connecting with enzymes like glucose-6-phosphate dehydrogenase. This relationship allows cells to adjust their metabolic flux according to physiological needs.
Associated diseases and disorders	Transaldolase 1 mutations are associated with transaldolase deficiency a rare metabolic disorder that can lead to liver dysfunction and immunodeficiency. This deficiency affects the cellular ability to balance nucleotide and lipid biosynthesis contributing to the disease phenotype. There is also a connection with oxidative stress-related disorders as Transaldolase 1 indirectly influences reactive oxygen species via its role in NADPH production which ties it to proteins involved in oxidative stress responses like NADPH oxidase.

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.

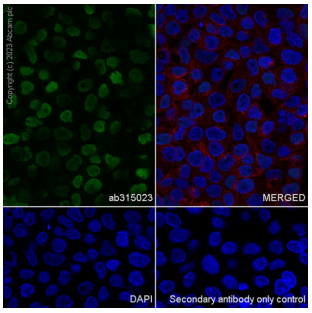
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

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.

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15 product images



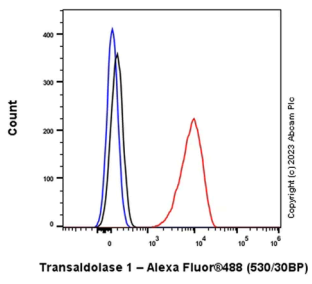
Immunocytochemistry/ Immunofluorescence - Anti-Transaldolase 1 antibody [EPR28140-51] - BSA and Azide free (ab315024)

Transaldolase 1 Immunocytochemistry/ Immunofluorescence staining of A431 (human epidermoid carcinoma epithelial cell) using rabbit Anti-Transaldolase 1 antibody

This data was developed using ab315023, the same antibody clone in a different buffer formulation

Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% TritonX-100 permeabilized A431 (human epidermoid carcinoma epithelial cell) cells labelling Transaldolase 1 with ab315023 at 1/50 (10.14 ug/ml) dilution, followed by ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed antibody at 1/1000 (2 ug/mL) dilution (Green). Confocal image showing nuclear staining in A431 cell line. Image was taken with a confocal microscope(Leica-Microsystems, TCS SP8). ab195889 Anti-alpha Tubulin mouse monoclonal antibody - Microtubule Marker (Alexa Fluor® 594) was used to counterstain tubulin at 1/200 (2.5 ug/mL) dilution (Red). The Nuclear counterstain was DAPI (Blue).

Secondary antibody only control: Secondary antibody is ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed at 1/1000 (2 ug/mL) dilution.

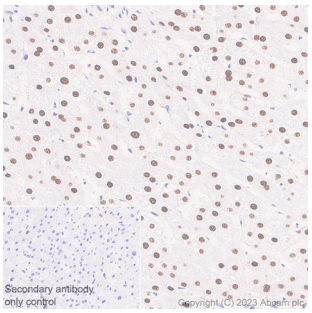


Flow Cytometry (Intracellular) - Anti-Transaldolase 1 antibody [EPR28140-51] - BSA and Azide free (ab315024)

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Flow cytometric analysis of 4% paraformaldehyde fixed 90% methanol permeabilized A431 (human epidermoid carcinoma epithelial cell) cells labelling Transaldolase 1 with ab315023 at 1/500 dilution (0.1 ug)/Red compared with a Rabbit monoclonal IgG (ab172730) (Black) isotype

control and an unlabelled control (cells without incubation with primary antibody and secondary antibody) (Blue). A Goat Anti-Rabbit IgG (Alexa Fluor® 488, ab150081) at 1/5000 dilution was used as the secondary antibody.



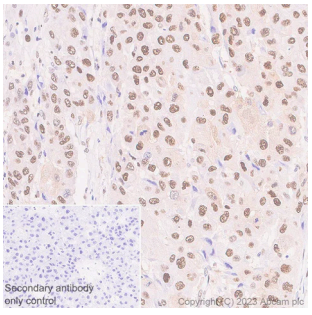
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Immunohistochemical analysis of paraffin-embedded Human liver tissue labeling Transaldolase 1 with ab315023 at 1/8000 (0.063 ug/ml) followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection). Positive staining on human liver. The section was incubated with ab315023 for 10 mins at room temperature. The immunostaining was performed on a Leica Biosystems BOND® RX instrument. Incubate slides with 3% Hydrogen Peroxide for 10 mins at room temperature after secondary antibody incubation to reduce the background. Counterstained with Hematoxylin.

Secondary antibody only control: Secondary antibody is a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection).

Heat mediated antigen retrieval was performed with Citrate buffer (pH 6.0, Epitope Retrieval Solution 1) for 20 mins.



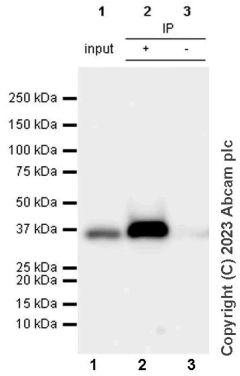
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Immunohistochemical analysis of paraffin-embedded Human hepatocellular carcinoma tissue labeling Transaldolase 1 with ab315023 at 1/8000 (0.063 ug/ml) followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection). Positive staining on human hepatocellular carcinoma. The section was incubated with ab315023 for 10 mins at room temperature. The immunostaining was performed on a Leica Biosystems BOND® RX instrument. Incubate slides with 3% Hydrogen Peroxide for 10 mins at room temperature after secondary antibody incubation to reduce the background. Counterstained with Hematoxylin.

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Lane 1: A431 (human epidermoid carcinoma epithelial cell) whole cell lysate

Lane 2: ab315023 IP in A431 (human epidermoid carcinoma epithelial cell) whole cell lysate

Lane 3:Rabbit monoclonal IgG (ab172730) instead of ab315023 in A431 whole cell lysate

Blocking and dilution buffer and concentration: 5% NFDM/TBST.

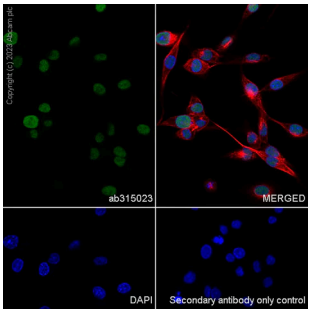
All lanes:
Immunoprecipitation - Anti-Transaldolase 1 antibody [EPR28140-51] (ab315023) at 1/30 dilution

All lanes:
A431 (human epidermoid carcinoma epithelial cell) whole cell lysate

Secondary

All lanes:
Immunoprecipitation - VeriBlot for IP Detection Reagent (HRP) (ab131366) at 1/5000 dilution

Exposure time: 3s



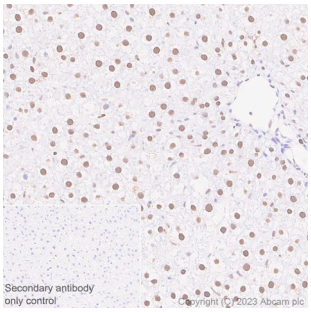
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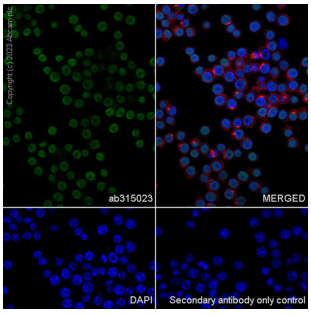
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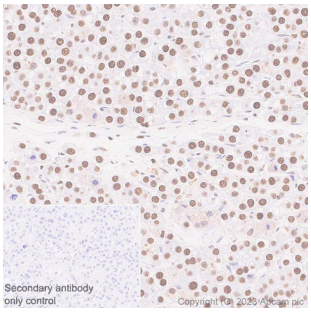
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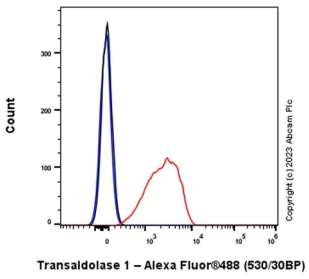
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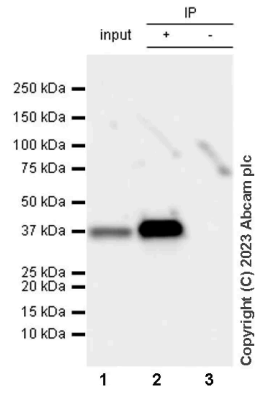
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Immunoprecipitation - Anti-Transaldolase 1 antibody [EPR28140-51] - BSA and Azide free (ab315024)

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Transaldolase 1 was immunoprecipitated from 0.35 mg C6 (rat glial tumor glial cell) whole cell lysate with ab315023 at 1/30 dilution (2ug in 0.35mg lysates). Western blot was performed on the immunoprecipitate using ab315023 at 1/1000 dilution. VeriBlot for IP secondary antibody(HRP) (ab131366) was used at 1/5000 dilution.
Lane 1: C6 (rat glial tumor glial cell) whole cell lysate

Lane 2: ab315023 IP in C6 (rat glial tumor glial cell) whole cell lysate

Lane 3:Rabbit monoclonal IgG (ab172730) instead of ab315023 in C6 whole cell lysate

Blocking and dilution buffer and concentration: 5% NFDM/TBST.

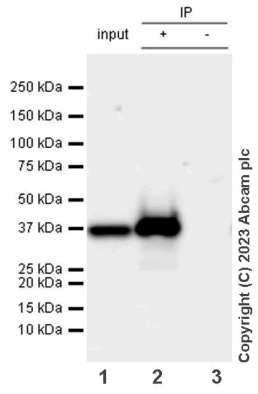
All lanes:
Immunoprecipitation - Anti-Transaldolase 1 antibody [EPR28140-51] (ab315023) at 1/30 dilution

All lanes:
C6 (rat glial tumor glial cell) whole cell lysate

Secondary

All lanes:
Immunoprecipitation - VeriBlot for IP Detection Reagent (HRP) (ab131366) at 1/5000 dilution

Exposure time: 3s



Immunoprecipitation - Anti-Transaldolase 1 antibody [EPR28140-51] - BSA and Azide free (ab315024)

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Lane 2: ab315023 IP in RAW 264.7 (mouse abelson murine leukemia virus-induced tumor macrophage) whole cell lysate

Lane 3:Rabbit monoclonal IgG (ab172730) instead of ab315023 in RAW 264.7 whole cell lysate

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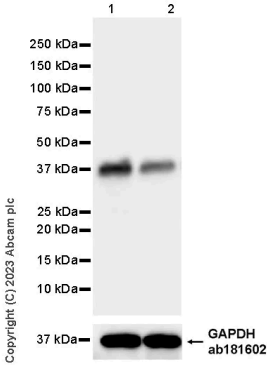
All lanes:
Immunoprecipitation - Anti-Transaldolase 1 antibody [EPR28140-51] (ab315023) at 1/30 dilution

All lanes:
RAW 264.7 (mouse abelson murine leukemia virus-induced tumor macrophage) whole cell lysate

Secondary

All lanes:
Immunoprecipitation - VeriBlot for IP Detection Reagent (HRP) (ab131366) at 1/5000 dilution

Exposure time: 3s



Western blot - Anti-Transaldolase 1 antibody [EPR28140-51] - BSA and Azide free (ab315024)

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Blocking and diluting buffer and concentration: 5% NFDM/TBST.

In Western blot, Anti-GAPDH antibody [EPR16891] - Loading Control (ab181602) staining at 1/200000 dilution.

All lanes:
Western blot - Anti-Transaldolase 1 antibody [EPR28140-51] (ab315023) at 1/1000 dilution

Lane 1:
HEK-293 (human embryonic kidney epithelial cell) transfected with scrambled siRNA control whole cell lysate at 20 µg

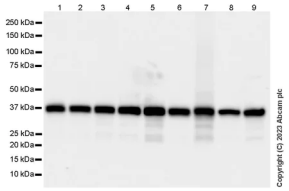
Lane 2:
HEK-293 transfected with siRNA specifically targeting TALDO1 whole cell lysate at 20 µg

Secondary

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

Observed band size: 37 kDa, 36 kDa

Exposure time: 3.25s



Western blot - Anti-Transaldolase 1 antibody [EPR28140-51] - BSA and Azide free (ab315024)

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Blocking and diluting buffer and concentration: 5% NFDM/TBST.

All lanes:
Western blot - Anti-Transaldolase 1 antibody [EPR28140-51] (ab315023) at 1/1000 dilution

Lane 1:
A431 (human epidermoid carcinoma epithelial cell) whole cell lysate at 20 µg

Lane 2:
293T (human embryonic kidney epithelial cell) whole cell lysate whole cell lysate at 20 µg

Lane 3:
HepG2 (human hepatocellular carcinoma epithelial cell) whole cell lysate whole cell lysate at 20 µg

Lane 4:
HeLa (human cervical adenocarcinoma epithelial cell) whole cell lysate whole cell lysate at 20 µg

Lane 5:
K-562 (human chronic myelogenous leukemia lymphoblast) whole cell lysate whole cell lysate at 20 µg

Lane 6:
C6 (rat glial tumor glial cell) whole cell lysatewhole cell lysate at 20 µg

Lane 7:
PC-12 (rat adrenal gland pheochromocytoma cell) whole cell lysate whole cell lysate at 20 µg

Lane 8:
C2C12 (mouse myoblast) whole cell lysate whole cell lysate at 20 µg

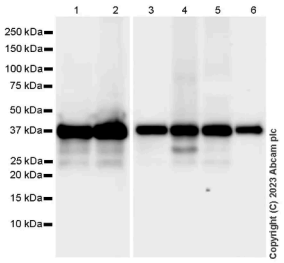
Lane 9:
RAW 264.7 (mouse Abelson murine leukemia virus-induced tumor macrophage) whole cell lysatewhole cell lysate at 20 µg

Secondary

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

Observed band size: 37 kDa

Exposure time: 3.25s



Western blot - Anti-Transaldolase 1 antibody [EPR28140-51] - BSA and Azide free (ab315024)

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All lanes:
Western blot - Anti-Transaldolase 1 antibody [EPR28140-51] (ab315023) at 1/1000 dilution

Lane 1:
Human liver tissue lysate at 20 µg

Lane 2:
Human liver cancer tissue lysate at 20 µg

Lane 3:
Mouse liver tissue lysate at 20 µg

Lane 4:
Mouse colon cancer tissue lysate at 20 µg

Lane 5:
Mouse breast cancer tissue lysate at 20 µg

Lane 6:
Rat liver tissue lysate at 20 µg

Secondary

Lanes 1 - 2:
Goat Anti-Rabbit IgG (HRP) with minimal cross-reactivity with human IgG at 1/2000 dilution

Lanes 3 - 6:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/100000 dilution

Observed band size: 37 kDa

Exposure time: 3.25s

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