abcam

ab249572

Anti-Triosephosphate isomerase antibody [EPR12149(B)] - 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	EPR12149(B)
Purification technique	Affinity purification
Concentration	1.003 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

ICC/IF

Not recommended

Species	Human, Mouse, Rat
Dilution info	-

Notes	-

IP

Not recommended

Species	Human, Mouse, Rat
Dilution info	-
Notes	-

WB

Tested

Species	Human
Dilution info	-
Notes	-

Species	Mouse
Dilution info	1/1000
Notes	-

Species	Rat
Dilution info	1/1000
Notes	-

IHC-P

Not recommended

Species	Human, Mouse, Rat
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
Notes	-

Expected

Species	Mouse, Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

Target data

See full target information TPI1

Function	Triosephosphate isomerase is an extremely efficient metabolic enzyme that catalyzes the interconversion between dihydroxyacetone phosphate (DHAP) and D-glyceraldehyde-3-phosphate (G3P) in glycolysis and gluconeogenesis. It is also responsible for the non-negligible production of methylglyoxal a reactive cytotoxic side-product that modifies and can alter proteins, DNA and lipids.

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	+4°C
Storage information	Do Not Freeze

Notes

ab249572 is the carrier-free version of ab170894.

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	Triosephosphate isomerase also known as TPI is an enzyme that plays an important role in glycolysis and gluconeogenesis by catalyzing the reversible isomerization of dihydroxyacetone phosphate (DHAP) to glyceraldehyde 3-phosphate (G3P). It has a molecular mass of approximately 27 kDa. This enzyme is widely expressed in many tissues with high presence in red blood cells muscle and brain tissues due to their high energy demands. As a dimer enzyme it exhibits significant catalytic efficiency that supports cellular energy management.
Biological function summary	The enzyme facilitates the efficient production of ATP by maintaining balance between DHAP and G3P vital for energy-metabolizing cells. Triosephosphate isomerase is not part of a larger complex itself but it significantly interacts with other enzymes in the glycolytic pathway. This interaction supports cellular respiration by ensuring a steady supply of intermediates needed for downstream processes.
Pathways	Triosephosphate isomerase is central to glycolysis and gluconeogenesis pathways. In glycolysis it works in tandem with other enzymes such as hexokinase and phosphofructokinase to breakdown glucose into pyruvate yielding ATP and NADH. It provides a critical link between glycolysis and energy production processes impacting the cellular metabolism and biochemical energy cycles. The enzyme also contributes to gluconeogenesis where it helps synthesize glucose from non-carbohydrate sources ensuring energy supply during fasting.
Associated diseases and disorders	Mutations or deficiencies in triosephosphate isomerase can lead to conditions such as triosephosphate isomerase deficiency a rare autosomal recessive disorder characterized by progressive neurological dysfunction hemolytic anemia and muscle weakness. This deficiency arises from dysfunctional or unstable isomerase activity leading to an accumulation of DHAP. Additionally research has shown links between this enzyme and Alzheimer's disease where altered glucose metabolism is

a common feature. Abnormal triosephosphate isomerase activity may interact with amyloid precursor protein processing in the disease pathology.

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

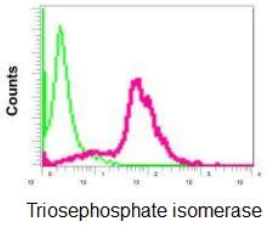
We do not recommend this combination. It is not covered by our product promise.

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.

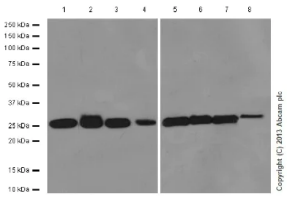
3 product images



Flow Cytometry (Intracellular) - Anti-Triosephosphate isomerase antibody [EPR12149(B)] - BSA and Azide free (ab249572)

Triosephosphate isomerase Flow Cytometry (Intracellular) staining using rabbit Anti-Triosephosphate isomerase antibody

This data was developed using ab170894, the same antibody clone in a different buffer formulation.
Intracellular flow cytometric analysis of permeabilized 293T cells labeling Triosephosphate isomerase with ab170894 at 1/10 dilution (red) compared with a rabbit IgG negative control (green).



Northwestern blot - Anti-Triosephosphate isomerase antibody [EPR12149(B)] - BSA and Azide free (ab249572)

This data was developed using ab170894, the same antibody clone in a different buffer formulation. Blocking and diluting buffer and concentration: 5% NFDM/TBST
All lanes:
Northwestern blot - Anti-Triosephosphate isomerase antibody [EPR12149(B)] (ab170894) at 1/1000 dilution

Lane 1:
Mouse brain tissue lysate at 20 µg

Lane 2:
Mouse heart tissue lysate at 20 µg

Lane 3:
Mouse kidney tissue lysate at 20 µg

Lane 4:
Mouse spleen tissue lysate at 20 µg

Lane 5:
Rat brain tissue lysate at 20 µg

Lane 6:
Rat heart tissue lysate at 20 µg

Lane 7:
Rat kidney tissue lysate at 20 µg

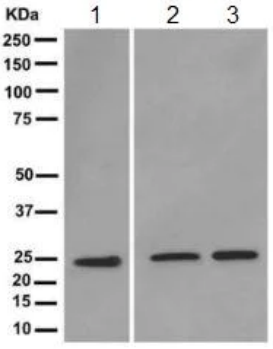
Lane 8:
Rat spleen tissue lysate at 20 µg

Secondary

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

Predicted band size: 31 kDa

Observed band size: 27 kDa



Western blot - Anti-Triosephosphate isomerase antibody [EPR12149(B)] - BSA and Azide free (ab249572)

This data was developed using ab170894, the same antibody clone in a different buffer formulation.
All lanes:
Western blot - Anti-Triosephosphate isomerase antibody [EPR12149(B)] (ab170894) at 1/1000 dilution

Lane 1:
Fetal liver lysate at 10 µg

Lane 2:
HeLa cell lysate at 10 µg

Lane 3:
293T cell lysate at 10 µg

Secondary

All lanes:
Goat anti-rabbit HRP at 1/2000 dilution

Predicted band size: 31 kDa

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