abcam

ab28760

Anti-Triosephosphate isomerase antibody

Key facts

Isotype	IgG
Host species	Goat
Storage buffer	pH: 7.3 Preservative: 0.02% Sodium azide Constituents: 0.5% BSA, 0.5% Tris buffered saline
Form	Liquid
Clonality	Polyclonal
Immunogen	Synthetic Peptide within Human TPI1 aa 200-250. The exact immunogen used to generate this antibody is proprietary information. Database link P60174
Purification technique	Affinity purification Immunogen
Specificity	This antibody is expected to recognise both reported isoforms.
Concentration	0.5 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →
Purification notes	This antibody was purified from goat serum by ammonium sulphate precipitation, followed by antigen affinity chromatography using the immunizing peptide.

Reactivity data

WB

Tested

Species	Human
Dilution info	0.001-0.01 µg/mL
Notes	1 hour primary incubation is recommended for this product.

Species	Mouse
Dilution info	0.001-0.01 µg/mL
Notes	-

Species	Dog
Dilution info	0.001-0.01 µg/mL
Notes	-

Predicted

Species	Rat, Cow
Dilution info	-
Notes	-

IHC-P

Tested

Species	Human
Dilution info	2-5 µg/mL
Notes	-

Expected

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

Predicted

Species	Rat, Cow
Dilution info	-
Notes	-

Flow Cyt

Tested

Species	Human
Dilution info	10 µg/mL
Notes	-

Expected

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

Predicted

Species	Rat, Cow
Dilution info	-
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	-20°C
Aliquoting information	Upon delivery aliquot

Storage information	Avoid freeze / thaw cycle

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

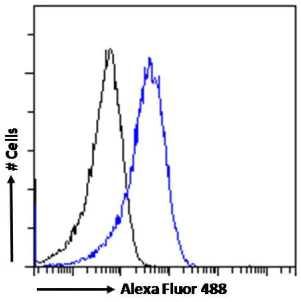
We do not recommend this combination. It is not covered by our product promise.

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.

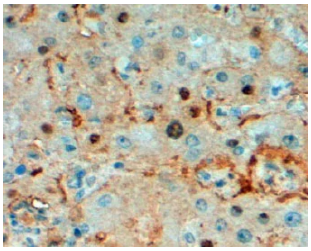
4 product images



Flow Cytometry - Anti-Triosephosphate isomerase antibody (ab28760)

Triosephosphate isomerase Flow Cytometry staining using goat Anti-Triosephosphate isomerase antibody

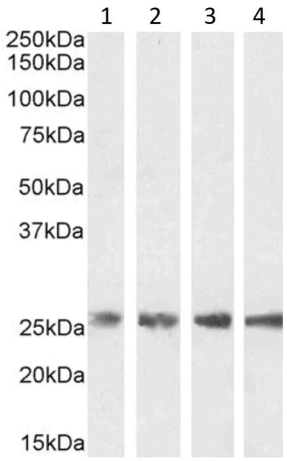
Flow cytometric analysis of paraformaldehyde fixed HeLa cells (blue line), permeabilized with 0.5% Triton. Primary incubation 1hr (10µg/mL) followed by Alexa Fluor 488 secondary antibody (1µg/mL). IgG control: Unimmunized goat IgG (black line) followed by Alexa Fluor 488 secondary antibody.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Triosephosphate isomerase antibody (ab28760)

Triosephosphate isomerase Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using goat Anti-Triosephosphate isomerase antibody

Immunohistochemical analysis of formalin-fixed, paraffin-embedded Human liver tissue, staining Triosephosphate isomerase with ab28760 at 2 µg/mL. Antigen retrieval was performed by heat mediation in a Tris/EDTA buffer (pH 9).



Western blot - Anti-Triosephosphate isomerase antibody (ab28760)

Triosephosphate isomerase Western blot staining using goat Anti-Triosephosphate isomerase antibody

Detected by chemiluminescence.
All lanes:
Western blot - Anti-Triosephosphate isomerase antibody (ab28760) at 0.001 µg/mL

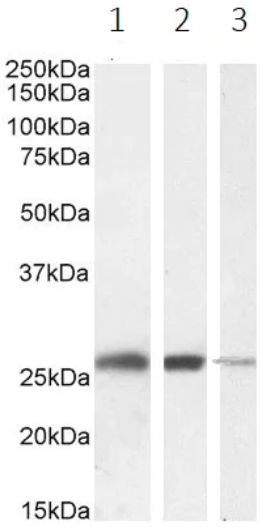
Lane 1:
HepG2 cell lysate at 35 µg

Lane 2:
HEK293 cell lysate at 35 µg

Lane 3:
HeLa cell lysate at 35 µg

Lane 4:
Jurkat cell lysate in RIPA buffer at 35 µg

Predicted band size: 31 kDa



Western blot - Anti-Triosephosphate isomerase antibody (ab28760)

Detected by chemiluminescence.
All lanes:
Western blot - Anti-Triosephosphate isomerase antibody (ab28760) at 0.001 µg/mL

Lane 1:
RAW264.7 cell lysate at 35 µg

Lane 2:
KNRK cell lysate at 35 µg

Lane 3:
MDCK cell lysate at 35 µg

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