abcam

ab249390

Anti-TPMT antibody [EPR10821(B)] - BSA and Azide free

Recombinant | RabMAb | KO Validated

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	EPR10821(B)
Purification technique	Affinity purification Protein A
Concentration	1.063 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IP

Not recommended

Species	Mouse, Human, Rat
Dilution info	-

Notes	-

WB

Tested

Species	Human
Dilution info	-
Notes	-

Expected

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

Predicted

Species	Rat
Dilution info	-
Notes	-

IHC-P

Not recommended

Species	Mouse, Human, Rat
Dilution info	-
Notes	-

ICC/IF

Not recommended

Species	Mouse, Human, Rat
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
Notes	-

Expected

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

Predicted

Species	Rat
Dilution info	-
Notes	-

Target data

See full target information TPMT

Function Catalyzes the S-methylation of thiopurine drugs such as 6-mercaptopurine (also called mercaptopurine, 6-MP or its brand name Purinethol) and 6-thioguanine (also called tioguanine or 6-TG) using S-adenosyl-L-methionine as the methyl donor (PubMed:18484748, PubMed:657528). TPMT activity modulates the cytotoxic effects of thiopurine prodrugs. A natural substrate for this enzyme has yet to be identified.

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

ab249390 is the carrier-free version of ab166909.

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	Thiopurine S-methyltransferase often called TPMT plays a role as an enzyme that catalyzes the S-methylation of thiopurine compounds like 6-mercaptopurine and azathioprine. It exists as a monomer with a molecular mass of about 28 kDa. In humans TPMT expresses mainly in the liver and kidney. The activity of TPMT varies among individuals due to genetic polymorphisms.
Biological function summary	TPMT is important in the metabolism of therapeutic thiopurine drugs. These drugs often require precise dosing to achieve effectiveness without toxicity. TPMT does not form part of a larger complex; it functions independently to methylate thiopurine drugs. Genetic variations can lead to different TPMT activity levels affecting a person's response to these drugs significantly.
Pathways	TPMT is integral to the drug metabolism pathway specifically in the detoxification and elimination processes of thiopurine drugs. While TPMT predominantly acts on thiopurines thioredoxin reductase 1 (TXNRD1) may also have a role in modulating

	redox balance and affect the thiopurine metabolism indirectly through related cellular processes. Together they influence the cellular response to drugs like azathioprine.
Associated diseases and disorders	Genetic variants in TPMT significantly contribute to thiopurine drug intolerance or toxicity particularly in conditions like inflammatory bowel disease and acute lymphoblastic leukemia where these drugs are used. Patients with low TPMT activity are at risk for severe myelosuppression a life-threatening bone marrow suppression. TPMT's relationship with the enzyme inosine monophosphate dehydrogenase (IMPDH) also illustrates its connection to nucleotide synthesis further linking TPMT to therapeutic outcomes in cancers.

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

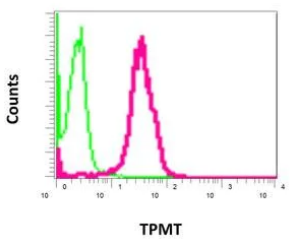
We do not recommend this combination. It is not covered by our product promise.

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

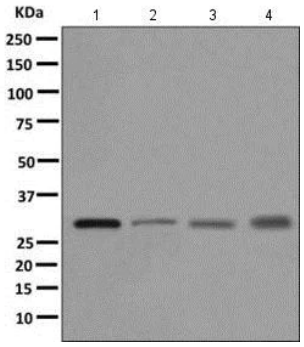


Flow Cytometry (Intracellular) - Anti-TPMT antibody [EPR10821(B)] - BSA and Azide free (ab249390)

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

This data was developed using ab166909, the same antibody clone in a different buffer formulation.

Intracellular flow cytometric analysis of permeabilized K562 cells using ab166909 at a 1/100 dilution (red) or a rabbit IgG (negative) (green).



Western blot - Anti-TPMT antibody [EPR10821(B)] - BSA and Azide free (ab249390)

TPMT Western blot staining using rabbit Anti-TPMT antibody

This data was developed using ab166909, the same antibody clone in a different buffer formulation.
All lanes:
Western blot - Anti-TPMT antibody [EPR10821(B)] - BSA and Azide free (ab249390) at 1/1000 dilution

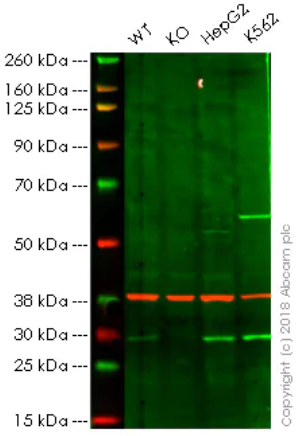
Lane 1:
K562 cell lysate at 10 µg

Lane 2:
HepG2 cell lysate at 10 µg

Lane 3:
Jurkat cell lysate at 10 µg

Lane 4:
TF-1 cell lysate at 10 µg

Predicted band size: 28 kDa



Western blot - Anti-TPMT antibody [EPR10821(B)] - BSA and Azide free (ab249390)

This data was developed using ab166909, the same antibody clone in a different buffer formulation.
Lanes 1 - 4: Merged signal (red and green). Green - ab166909 observed at 28 kDa. Red - loading control, ab9484, observed at 37 kDa.

ab166909 was shown to recognize TPMT in wild-type HAP1 cells as signal was lost at the expected MW in TPMT knockout cells. Additional cross-reactive bands were observed in the wild-type and knockout cells. Wild-type and TPMT knockout samples were subjected to SDS-PAGE. ab166909 and ab9484 (Mouse anti-GAPDH loading control) were incubated overnight at 4°C at 1/1000 dilution and 1/20000 dilution respectively. Blots were developed with Goat anti-Rabbit IgG H&L (IRDye® 800CW) preabsorbed ab216773 and Goat anti-Mouse IgG H&L (IRDye® 680RD) preabsorbed ab216776 secondary antibodies at 1/10000 dilution for 1 hour at room temperature before imaging.

All lanes:
Western blot - Anti-TPMT antibody [EPR10821(B)] (ab166909) at 1/1000 dilution

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

Lane 2:
TPMT knockout HAP1 whole cell lysate at 20 µg

Lane 3:
HepG2 whole cell lysate at 20 µg

Lane 4:

K562 whole cell lysate at 20 µg

Predicted band size: 28 kDa

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