abcam

ab245762

Anti-GST3 / GST pi antibody [EPR8263] - 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	EPR8263
Purification technique	Affinity purification Protein A
Dissociation constant	1 x 10^{-10} M
Concentration	1.034 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC-P

Tested

Species	Human, Rat, Mouse

Dilution info	-
Notes	-

IP

Not recommended

Species	Mouse, Rat, Human
Dilution info	-
Notes	-

WB

Tested

Species	Human, Mouse, Rat
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	-
Notes	-

Expected

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

Flow Cyt (Intra)

Tested

Species	Human

Dilution info	-
Notes	-

Expected

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

Target data

See full target information GSTP1

Function	Catalyzes conjugation of reduced glutathione to a wide number of exogenous and endogenous hydrophobic electrophiles (PubMed:1540159, PubMed:1567427, PubMed:8433974). Involved in the formation of glutathione conjugates of both prostaglandin A2 (PGA2) and prostaglandin J2 (PGJ2) (PubMed:9084911). Participates in the formation of novel hepoxilin regioisomers (PubMed:21046276). Acts as a negative regulator of ferroptosis by mediating glutathione conjugation and detoxification of 4-hydroxynonenal (4-HNE) reactive aldehyde (PubMed:38016474). Negatively regulates CDK5 activity via p25/p35 translocation to prevent neurodegeneration (PubMed:21668448).

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

ab245762 is the carrier-free version of ab138491.

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	GST3 also known as GST pi or GSTP is a protein part of the glutathione S-transferase family. These enzymes are involved in detoxifying processes by catalyzing the conjugation of glutathione to harmful substances. GSTP is approximately 23 kDa in size and is predominantly expressed in mammalian tissues including the liver and lung. These tissues play active roles in detoxifying external chemicals and managing oxidative stress in the body.
Biological function summary	GST3 contributes to the detoxification of xenobiotics and electrophilic compounds playing a protective role against cellular damage. It can exist as homo-dimers or form hetero-dimers with other GST family members participating in larger enzyme complexes. Through conjugation reactions GSTP helps in the detoxification processes thereby aiding cellular defenses and maintaining cellular redox balance.
Pathways	GST3 is an integral part of the phase II detoxification pathway and oxidative stress response. It interacts closely with other proteins such as Nrf2 (Nuclear factor erythroid 2-related factor 2) and helps regulate the transcription of antioxidant proteins that protect against oxidative damage. This enzyme plays a role in modulating the MAPK signaling pathway which influences cell proliferation and apoptosis.
Associated diseases and disorders	GSTP has links to several cancer types including liver and lung cancer. Its overexpression in tumors suggests its role in cancer cell survival and resistance to chemotherapy. GSTP interacts with cancer-associated proteins like c-Jun N-terminal kinase (JNK) influencing pathways that lead to aberrant cellular growth and transformation. It also has associations with neurodegenerative diseases given its role in counteracting oxidative stress which commonly underpins neurodegeneration.

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.

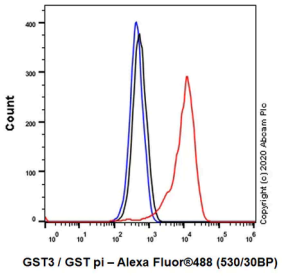
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

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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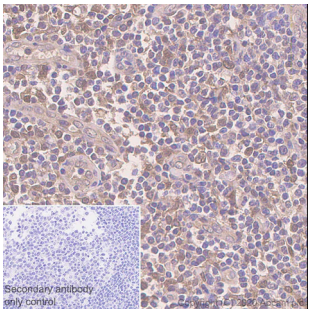
8 product images



Flow Cytometry (Intracellular) - Anti-GST3 / GST pi antibody [EPR8263] - BSA and Azide free (ab245762)

GST3 / GST pi Flow Cytometry (Intracellular) staining using rabbit Anti-GST3 / GST pi antibody

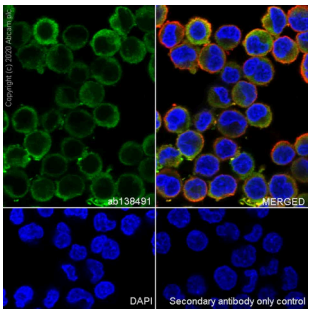
This data was developed using ab138491, the same antibody clone in a different buffer formulation. Intracellular Flow Cytometry analysis of Jurkat (Human T cell leukemia T lymphocyte) cells labeling GST3 / GST pi with Purified ab138491 at 1/20 dilution (10 µg/mL) (Red). Cells were fixed with 4% Paraformaldehyde and permeabilised with 90% Methanol. A Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) secondary antibody was used at 1/2000. Isotype control - Rabbit monoclonal IgG (Black). Unlabeled control - Cell without incubation with primary antibody and secondary antibody (Blue).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-GST3 / GST pi antibody [EPR8263] - BSA and Azide free (ab245762)

This data was developed using ab138491, the same antibody clone in a different buffer formulation.
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of human tonsil

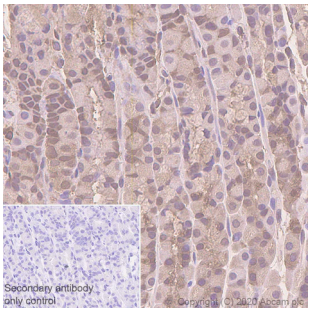
tissue sections labeling GST3 / GST pi with Purified ab138491 at 1/100 dilution (0.99 µg/mL). Heat mediated antigen retrieval using Bond™ Epitope Retrieval Solution 1 (pH 6.0). Rabbit specific IHC polymer detection kit HRP/DAB (ab209101) was used as the secondary antibody. Negative control: PBS instead of the primary antibody. Hematoxylin was used as a counterstain.



Immunocytochemistry/ Immunofluorescence - Anti-GST3 / GST pi antibody [EPR8263] - BSA and Azide free (ab245762)

GST3 / GST pi Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-GST3 / GST pi antibody

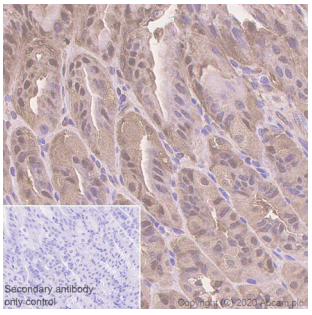
This data was developed using ab138491, the same antibody clone in a different buffer formulation.
Immunocytochemistry analysis of K-562 (Human chronic myelogenous leukemia lymphoblast) cells labeling GST3 / GST pi with Purified ab138491 at 1/50 dilution (1.98 µg/mL). Cells were fixed in 4% Paraformaldehyde and permeabilized with 0.1% tritonX-100. Cells were counterstained with ab195889 Anti-alpha Tubulin antibody [DM1A] - Microtubule Marker (Alexa Fluor® 594) 1/200 dilution (2.5 µg/mL). Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) was used as the secondary antibody at 1/1000 dilution (2 µg/mL). DAPI (blue) was used as nuclear counterstain. PBS instead of the primary antibody was used as the secondary antibody only control.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-GST3 / GST pi antibody [EPR8263] - BSA and Azide free (ab245762)

GST3 / GST pi Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-GST3 / GST pi antibody

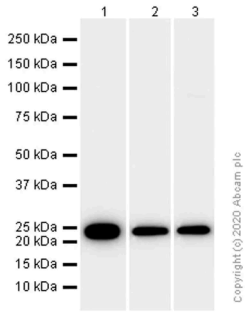
This data was developed using ab138491, the same antibody clone in a different buffer formulation.
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of rat stomach tissue sections labeling GST3 / GST pi with Purified ab138491 at 1/100 dilution (0.99 µg/mL). Heat mediated antigen retrieval using Bond™ Epitope Retrieval Solution 1 (pH 6.0). 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-GST3 / GST pi antibody [EPR8263] - BSA and Azide free (ab245762)

GST3 / GST pi Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-GST3 / GST pi antibody

This data was developed using ab138491, the same antibody clone in a different buffer formulation.
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of mouse stomach tissue sections labeling GST3 / GST pi with Purified ab138491 at 1/100 dilution (0.99 µg/mL). Heat mediated antigen retrieval using Bond™ Epitope Retrieval Solution 1 (pH 6.0). 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.



Western blot - Anti-GST3 / GST pi antibody [EPR8263] - BSA and Azide free (ab245762)

GST3 / GST pi Western blot staining using rabbit Anti-GST3 / GST pi antibody

This data was developed using ab138491, the same antibody clone in a different buffer formulation.
All lanes:
Western blot - Anti-GST3 / GST pi antibody [EPR8263] (ab138491) at 1/1000 dilution

Lane 1:
K-562 (Human chronic myelogenous leukemia lymphoblast) whole cell lysate at 15 µg

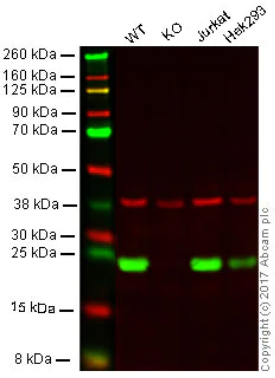
Lane 2:
Mouse brain lysate at 15 µg

Lane 3:
Rat brain lysate at 15 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/20000 dilution

Predicted band size: 23 kDa



Western blot - Anti-GST3 / GST pi antibody [EPR8263] - BSA and Azide free (ab245762)

GST3 / GST pi Western blot staining using rabbit Anti-GST3 / GST pi antibody

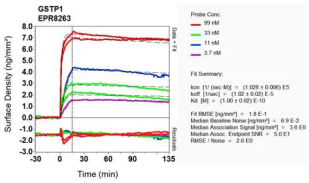
Lane 1: Wild type HAP1 whole cell lysate (20 µg)
Lane 2: GST3 knockout HAP1 whole cell lysate (20 µg)
Lane 3: Jurkat whole cell lysate (20 µg)
Lane 4: Hek293 whole cell lysate (20 µg)
Lanes 1 - 4: Merged signal (red and green). Green - ab138491 observed at 23 kDa. Red - loading control, ab9484, observed at 37 kDa.

ab138491 was shown to specifically react with GST3 when GST3 knockout samples were used. Wild-type and GST3 knockout samples were subjected to SDS-PAGE. ab138491 and ab9484 (Mouse anti GAPDH loading control) were incubated overnight at 4°C at 1000 dilution and 1/10001 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.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA glycerol and sodium azide (ab138491).

All lanes:
Western blot - Anti-GST3 / GST pi antibody [EPR8263] (ab138491)

Predicted band size: 23 kDa



OI-RD Scanning - Anti-GST3 / GST pi antibody [EPR8263] - BSA and Azide free (ab245762)

We have systematically measured KD (the equilibrium dissociation constant between the antibody and its antigen), of more than 840 recombinant antibodies to assess not only their individual KD values but also to see the average affinity of antibody. Based on the comparison with published literature values for mouse monoclonal antibodies, Recombinant antibodies appear to be on average 1-2 order of magnitude higher affinity.

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