abcam

ab138491

Anti-GST3 / GST pi antibody [EPR8263]

Recombinant | RabMAb | KO Validated | 20ul selling size

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Preservative: 0.01% Sodium azide Constituents: PBS, 40% Glycerol (glycerin, glycerine), 0.05% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	EPR8263
Purification technique	Affinity purification Protein A
Dissociation constant	1 x 10^{-10} M
Concentration	0.097 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC-P

Tested

Species	Mouse
Dilution info	1/100
Notes	For unpurified please use at 1/250 - 1/500 dilution

	Perform heat-mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.

Species	Rat
Dilution info	1/100
Notes	For unpurified please use at 1/250 - 1/500 dilution Perform heat-mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.

Species	Human
Dilution info	1/100
Notes	For unpurified please use at 1/250 - 1/500 dilution Perform heat-mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.

IP

Not recommended

Species	Mouse, Rat, Human
Dilution info	-
Notes	-

WB

Tested

Species	Human
Dilution info	1/1000 - 1/10000
Notes	-

Expected

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

ICC/IF

Tested

Species	Human
Dilution info	1/50
Notes	For unpurified use at 1/100 - 1/250

Expected

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

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/20
Notes	-

Expected

Species	Mouse, Rat
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	Conditional Ambient
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C

Notes

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.

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

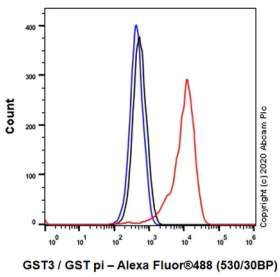
We do not recommend this combination. It is not covered by our product promise.

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.

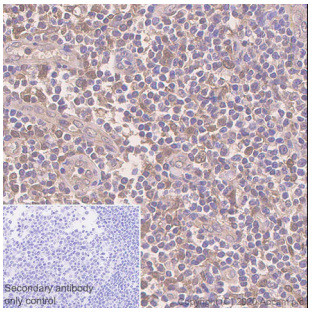
8 product images



Flow Cytometry (Intracellular) - Anti-GST3 / GST pi antibody [EPR8263] (ab138491)

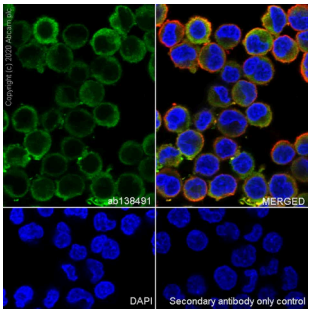
GST3 / GST pi Flow Cytometry (Intracellular) staining using rabbit Anti-GST3 / GST pi antibody

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] (ab138491)

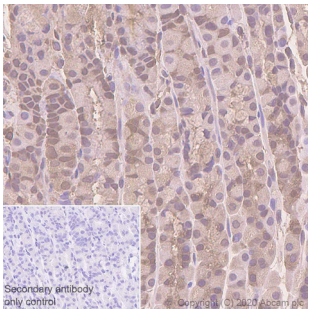
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of human tonsil tissue sections labeling GST3 / GST pi with Purified ab138491 at 1/100 dilution (0.99 µg/mL). Heat mediated antigen retrieval using Bond™ Epitope Retrieval Solution 1 (pH 6.0). Rabbit specific IHC polymer detection 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] (ab138491)

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

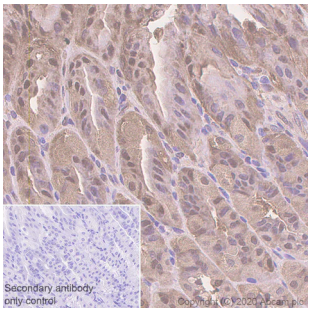
Immunocytochemistry analysis of K-562 (Human chronic myelogenous leukemia lymphoblast) cells labeling GST3 / GST pi with Purified ab138491 at 1/50 dilution (1.98 µg/mL). Cells were fixed in 4% Paraformaldehyde and permeabilized with 0.1% tritonX-100. Cells were counterstained with ab195889 Anti-alpha 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] (ab138491)

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

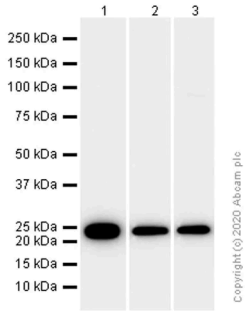
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of rat stomach tissue sections labeling GST3 / GST pi with Purified ab138491 at 1/100 dilution (0.99 µg/mL). Heat mediated antigen retrieval using Bond™ Epitope Retrieval Solution 1 (pH 6.0). Rabbit specific IHC polymer detection 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] (ab138491)

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

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] (ab138491)

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

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

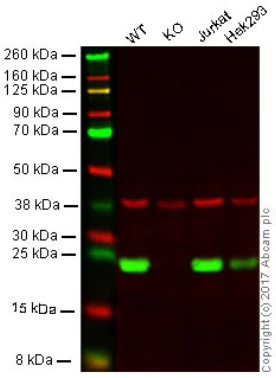
Lane 2:
Mouse brain lysate at 15 µg

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] (ab138491)

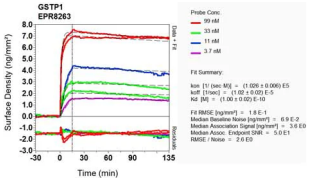
GST3 / GST pi Western blot staining using rabbit Anti-GST3 / GST pi antibody

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.

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] (ab138491)

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'.