abcam

ab242014

Anti-GST3 / GST pi antibody [EPR20554] - 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	EPR20554
Purification technique	Affinity purification Protein A
Concentration	1.014 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IP

Not recommended

Species	Human
Dilution info	-

Notes	-

WB

Tested

Species	Human
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
Notes	-

IHC-P

Tested

Species	Human
Dilution info	-
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

ab242014 is the carrier-free version of ab241331.

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

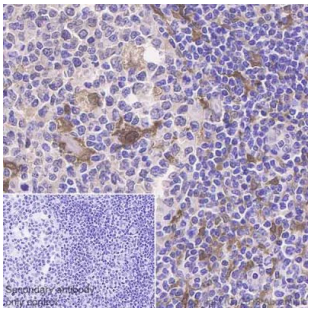
We do not recommend this combination. It is not covered by our product promise.

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.

7 product images



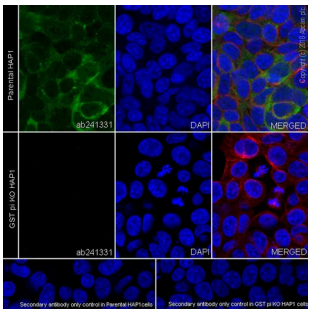
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-GST3 / GST pi antibody [EPR20554] - BSA and Azide free (ab242014)

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

Immunohistochemical analysis of paraffin-embedded human tonsil tissue labeling GST3 / GST pi with ab241331 at 1/4000 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) Ready to use. Cytoplasmic and nuclear staining on subset immune cells of human tonsil. (PMID: 18604726). Counterstained with Hematoxylin.
Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (HRP) Ready to use.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab241331).

Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.



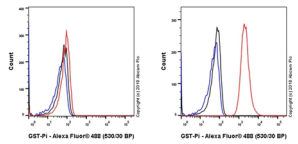
Immunocytochemistry/ Immunofluorescence - Anti-GST3 / GST pi antibody [EPR20554] - BSA and Azide free (ab242014)

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

Immunofluorescent analysis of 4% paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized wild type and GST pi KO HAP1 (GST pi knockout human chronic myelogenous leukemia near-haploid cell line) cells labeling GST3 / GST pi (Green) with ab241331 at 1/250 dilution, followed by Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution. Confocal image showing cytoplasmic staining in parental HAP1 cell line and no staining in GST pi KO HAP1 cell line.
The nuclear counter stain is DAPI (blue). Tubulin is detected with Anti-alpha Tubulin antibody [DM1A] - Microtubule Marker (Alexa Fluor® 594) (ab195889) (red) at 1/200 dilution.

Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution.

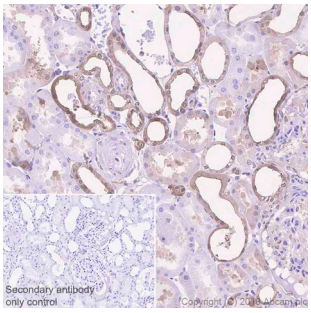
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab241331).



Flow Cytometry (Intracellular) - Anti-GST3 / GST pi antibody [EPR20554] - BSA and Azide free (ab242014)

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

Intracellular flow cytometric analysis of 4% paraformaldehyde-fixed, 90% methanol-permeabilized GST pi KO HAP1 (human chronic myelogenous leukemia near-haploid cell line, Left) / Wild-type HAP1 (Right) cell line labeling GST3 / GST pi with ab241331 at 1/300 dilution (red) compared with a Rabbit IgG, monoclonal [EPR25A] - Isotype Control (ab172730) (black) and an unlabeled control (cells without incubation with primary antibody and secondary antibody) (blue). Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077) at 1/2000 dilution was used as the secondary antibody.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab241331).



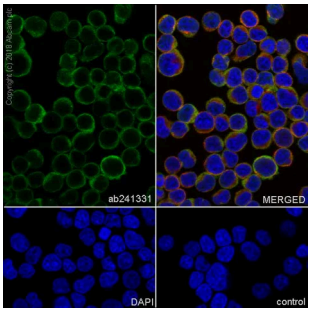
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-GST3 / GST pi antibody [EPR20554] - BSA and Azide free (ab242014)

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

Immunohistochemical analysis of paraffin-embedded human kidney tissue labeling GST3 / GST pi with ab241331 at 1/4000 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) Ready to use. Cytoplasmic and nuclear staining on tubules of human kidney (PMID: 1977319). Counterstained with Hematoxylin.
Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (HRP) Ready to use.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab241331).

Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.



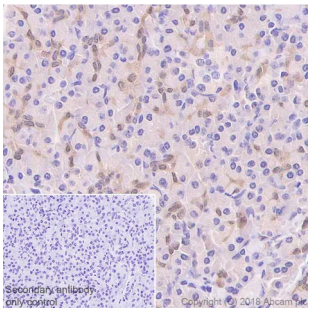
Immunocytochemistry/ Immunofluorescence - Anti-GST3 / GST pi antibody [EPR20554] - BSA and Azide free (ab242014)

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

Immunofluorescent analysis of 4% paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized Jurkat (human T cell leukemia T lymphocyte) cells labeling GST3 GST pi (Green) with ab241331 at 1/250 dilution, followed by Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution. Confocal image showing cytoplasmic staining in Jurkat cell line. The nuclear counter stain is DAPI (blue). Tubulin is detected with Anti-alpha Tubulin antibody [DM1A] - Microtubule Marker (Alexa Fluor® 594) (ab195889) (red) at 1/200 dilution.

Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab241331).



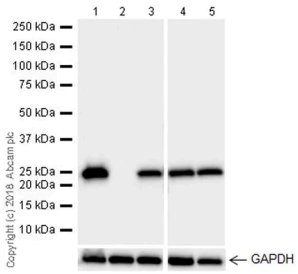
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-GST3 / GST pi antibody [EPR20554] - BSA and Azide free (ab242014)

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

Immunohistochemical analysis of paraffin-embedded human pancreas tissue labeling GST3 / GST pi with ab241331 at 1/4000 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) Ready to use. Cytoplasmic and nuclear staining on duct epithelium of human pancreas. (PMID: 1977319). Counterstained with Hematoxylin.
Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (HRP) Ready to use.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab241331).

Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.



Western blot - Anti-GST3 / GST pi antibody [EPR20554] - BSA and Azide free (ab242014)

Blocking/Diluting buffer and concentration: 5% NFDM/TBST
ab241331 was shown to specifically react with GST3 / GST pi in wild-type HAP1 cells as signal was lost in GST3 / GST pi knockout cells. Wild-type and GST3 / GST pi knockout samples were subjected to SDS-PAGE. ab241331 and ab181602 (Rabbit anti-GAPDH loading control) were incubated 1 hour at room temperature at 1/1000 dilution and 1/200,000 dilution respectively. Blots were developed with Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated (ab97051) secondary antibody at 1/100,000 dilution for 1 hour at room temperature before imaging. The blot was developed on a BIO-RAD® ChemiDoc™ MP instrument using the ECL technique.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab241331).

All lanes:
Western blot - Anti-GST3 / GST pi antibody [EPR20554] (ab241331) at 1/1000 dilution

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

Lane 2:
GST3 / GST pi knockout HAP1 cell lysate at 20 µg

Lane 3:
PC-3 (human prostate adenocarcinoma epithelial cell), whole cell lysate at 20 µg

Lane 4:
Jurkat (human T cell leukemia T lymphocyte), whole cell lysate at 20 µg

Lane 5:
HEK-293 (human embryonic kidney epithelial cell), whole cell lysate at 20 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/100000 dilution

Developed using the ECL technique.

Predicted band size: 23 kDa

Observed band size: 23 kDa

Exposure time: 15s

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