abcam

ab300650

Anti-Myeloperoxidase antibody [EPR20257] - Rat IgG2a (Chimeric)

Anti-Myeloperoxidase antibody [EPR20257] - Rat IgG2a (Chimeric) (ab300650) is a rat monoclonal antibody detecting Myeloperoxidase in **Flow Cytometry (Intra), IHC-P, ICC/IF**. Suitable for **Human, Mouse, Rat**.

- Biophysical QC for unrivalled batch-batch consistency

This antibody is the chimeric Rat version of clone EPR20257, available in rabbit as ab208670 with over 250 publications. Same clone, same staining pattern, different species antibody backbone.
Learn more about chimeric antibodies

Recombinant | 20ul selling size

Key facts

Isotype	IgG2a
Host species	Rat
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	EPR20257
Purification technique	Ion exchange chromatography
Concentration	0.978 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC-P

Tested

Species	Human
Dilution info	1/10000
Notes	Perform heat-mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.

Species	Mouse
Dilution info	1/10000
Notes	Perform heat-mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.

Species	Rat
Dilution info	1/10000
Notes	Perform heat-mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.

ICC/IF

Tested

Species	Human
Dilution info	1/50
Notes	-

Expected

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

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/1000

Notes	-

Species	Mouse
Dilution info	1/1000
Notes	-

Expected

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

Target data

See full target information MPO

Function	Part of the host defense system of polymorphonuclear leukocytes. It is responsible for microbicidal activity against a wide range of organisms. In the stimulated PMN, MPO catalyzes the production of hypohalous acids, primarily hypochlorous acid in physiologic situations, and other toxic intermediates that greatly enhance PMN microbicidal activity (PubMed:9922160). Mediates the proteolytic cleavage of alpha-1-microglobulin to form t-alpha-1-microglobulin, which potently inhibits oxidation of low-density lipoprotein particles and limits vascular damage (PubMed:25698971).

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage duration	1-2 weeks
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

Notes

What is this antibody validated in?
Anti-Myeloperoxidase antibody [EPR20257] - Rat IgG2a (Chimeric) (ab300650) is a rat recombinant monoclonal antibody and is validated for use in Flow Cytometry (Intra), Immunohistochemistry (IHC-P), Immunocytochemistry/immunofluorescence (ICC/IF) in Human, Mouse, Rat samples.

Other related products
We have a range of other formats of antibody clone [EPR20257] also available for your convenience: ab208670, Carrier free - ab221847, Alexa Fluor® 488 - ab225474, ab300650, Carrier free - ab300651, Biotin - ab322301, HRP - ab323726

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.

Trial sizes available!
Test your antibody or perform pre-screening before committing to a larger quantity. Sold in 20µl. Discover our selection of trial-size antibodies.

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	Myeloperoxidase also called MPO is an enzyme that plays a critical role in the body's immune response. This protein has a mass of approximately 150 kDa and exists as a dimer composed of heavy and light polypeptide chains. Myeloperoxidase is prominently expressed in neutrophils and monocytes which are types of white blood cells important for combating infections. The enzyme catalyzes the production of hypochlorous acid and other reactive substances by utilizing hydrogen peroxide and chloride ions. These reactive substances help in neutralizing pathogens during the immune response.
Biological function summary	The generation of reactive oxygen species by myeloperoxidase is essential for microbicidal activity. Myeloperoxidase functions as part of the antimicrobial system in the phagosome which is the intracellular compartment where pathogens are degraded. This enzyme works in conjunction with other components of the immune system such as NADPH oxidase. By generating hypochlorous acid MPO contributes to the oxidative burst a rapid release of reactive oxygen species during the response to pathogens.
Pathways	Myeloperoxidase integrates into the immune defense and inflammatory pathways. In particular it is associated with the neutrophil degranulation pathway where it releases its enzymatic contents to fight off microbes. MPO also interacts with proteins involved in oxidative stress processes such as superoxide dismutase

	which moderates levels of reactive oxygen species in cells. These interactions ensure balance in the immune response preventing excessive tissue damage during inflammation.
Associated diseases and disorders	Dysregulated MPO activity can contribute to the development of diseases. For instance myeloperoxidase is linked with atherosclerosis a cardiovascular condition where inflammation and oxidative stress lead to plaque formation in the arteries. It also associates with vasculitis an autoimmune disorder causing inflammation of blood vessels. Both disorders can relate to the inflammatory pathways that involve MPO and proteins like C-reactive protein which serves as a marker of inflammation. Understanding MPO's role in these conditions is important for effective therapeutic interventions.

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

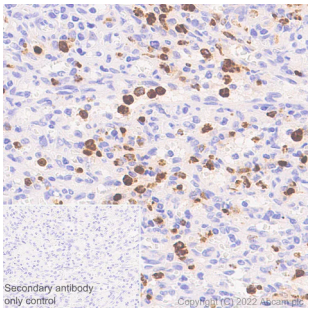
We do not recommend this combination. It is not covered by our product promise.

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.

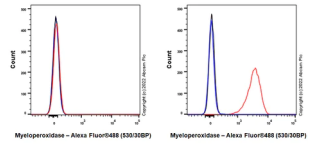
Full details and terms and conditions can be found here:
Terms & Conditions.

7 product images



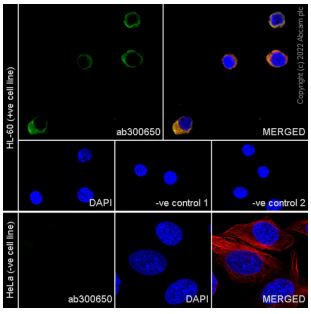
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Myeloperoxidase antibody [EPR20257] - Rat IgG2a (Chimeric) (ab300650)

Immunohistochemical analysis of paraffin-embedded human spleen tissue labeling Myeloperoxidase with ab300650 at 1/10000 dilution (0.101 µg/ml) followed by ready to use LeicaDS9800 (Bond® Polymer Refine Detection). Positive staining on human spleen. The section was incubated with ab300650 for 30 mins at room temperature, followed by Goat Anti-rat IgG antibody (ab102248) for 8 mins during the LeicaDS9800 kit staining procedure. The immunostaining was performed on a Leica Biosystems BOND® RX instrument. Counterstained with Hematoxylin. Secondary antibody only control: Secondary antibody is ready to use LeicaDS9800 (Bond® Polymer Refine Detection). Heat mediated antigen retrieval with Citrate buffer (pH 6.0, epitope retrieval solution 1) for 20 mins.



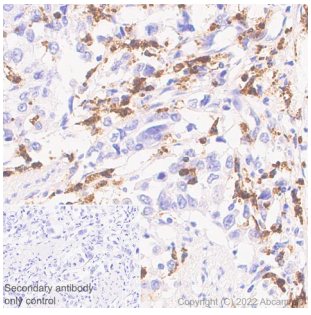
Flow Cytometry (Intracellular) - Anti-Myeloperoxidase antibody [EPR20257] - Rat IgG2a (Chimeric) (ab300650)

Flow cytometric analysis of 4% paraformaldehyde-fixed 90% methanol permeabilized HeLa (human cervix adenocarcinoma epithelial cell, Left) / HL-60 (human acute promyelocytic leukemia promyeloblast, Right) cells labeling Myeloperoxidase with ab300650 at 1/1000 dilution (0.1µg) (Red) compared with a rat monoclonal IgG (Black) isotype control and an unlabeled control (cells without incubation with primary antibody and secondary antibody) (Blue). Goat F(ab)2 Anti-Rat IgG Fc (Alexa Fluor® 488, ab150161) at 1/2000 dilution was used as the secondary antibody. Negative control: HeLa (PMID: 12040446).



Immunocytochemistry/ Immunofluorescence - Anti-Myeloperoxidase antibody [EPR20257] - Rat IgG2a (Chimeric) (ab300650)

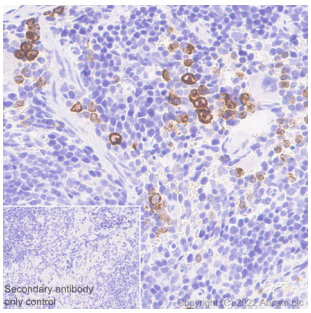
Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized HL-60 (human acute promyelocytic leukemia promyeloblast) cells labeling Myeloperoxidase with ab300650 at 1/50 dilution (20.26 µg/ml), followed by ab150161 Goat F(ab')2 Anti-Rat IgG Fc (Alexa Fluor® 488) preadsorbed antibody at 1/1000 dilution (2 µg/ml) (Green). Confocal image showing cytoplasmic staining in HL-60 cell line. Negative control: HeLa (PMID: 12040446). ab179513 Anti-beta Tubulin rabbit monoclonal antibody was used to counterstain tubulin at 1/200 dilution (10µg/ml), followed by ab150080 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 594) at a 1/500 dilution (4 µg/ml) (Red). The nuclear counterstain was DAPI (Blue). -ve control 1: ab300650 at a 1/50 dilution followed by ab150080 at a 1/500 dilution. -ve control 2: ab179513 at a 1/200 dilution followed by ab150161 at a 1/1000 dilution.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Myeloperoxidase antibody [EPR20257] - Rat IgG2a (Chimeric) (ab300650)

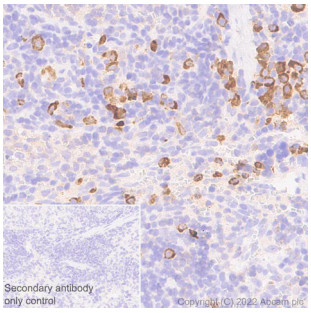
Immunohistochemical analysis of paraffin-embedded human gastric carcinoma tissue labeling Myeloperoxidase with ab300650 at 1/10000 dilution (0.101 µg/ml) followed by ready to use LeicaDS9800 (Bond® Polymer Refine Detection). Positive staining on human gastric carcinoma. The section was incubated with ab300650 for 30 mins at room temperature, followed by Goat Anti-rat IgG antibody (ab102248) for 8 mins during the LeicaDS9800 kit staining procedure. The immunostaining was performed on a Leica Biosystems BOND® RX instrument. Counterstained with Hematoxylin. Secondary antibody only control: Secondary antibody is ready to use LeicaDS9800

(Bond® Polymer Refine Detection). Heat mediated antigen retrieval with Citrate buffer (pH 6.0, epitope retrieval solution 1) for 20 mins.



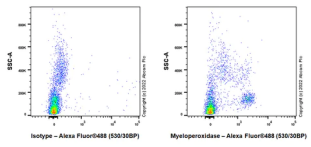
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Myeloperoxidase antibody [EPR20257] - Rat IgG2a (Chimeric) (ab300650)

Immunohistochemical analysis of paraffin-embedded mouse spleen tissue labeling Myeloperoxidase with ab300650 at 1/10000 dilution (0.101 µg/ml) followed by ready to use LeicaDS9800 (Bond® Polymer Refine Detection). Positive staining on mouse spleen. The section was incubated with ab300650 for 30 mins at room temperature, followed by Goat Anti-rat IgG antibody (ab102248) for 8 mins during the LeicaDS9800 kit staining procedure. The immunostaining was performed on a Leica Biosystems BOND® RX instrument. Counterstained with Hematoxylin. Secondary antibody only control: Secondary antibody is ready to use LeicaDS9800 (Bond® Polymer Refine Detection). Heat mediated antigen retrieval with Citrate buffer (pH 6.0, epitope retrieval solution 1) for 20 mins.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Myeloperoxidase antibody [EPR20257] - Rat IgG2a (Chimeric) (ab300650)

Immunohistochemical analysis of paraffin-embedded rat spleen tissue labeling Myeloperoxidase with ab300650 at 1/10000 dilution (0.101 µg/ml) followed by ready to use LeicaDS9800 (Bond® Polymer Refine Detection). Positive staining on rat spleen. The section was incubated with ab300650 for 30 mins at room temperature, followed by Goat Anti-rat IgG antibody (ab102248) for 8 mins during the LeicaDS9800 kit staining procedure. The immunostaining was performed on a Leica Biosystems BOND® RX instrument. Counterstained with Hematoxylin. Secondary antibody only control: Secondary antibody is ready to use LeicaDS9800 (Bond® Polymer Refine Detection). Heat mediated antigen retrieval with Citrate buffer (pH 6.0, epitope retrieval solution 1) for 20 mins.



Flow Cytometry (Intracellular) - Anti-Myeloperoxidase antibody [EPR20257] - Rat IgG2a (Chimeric) (ab300650)

Flow cytometric analysis of 4% paraformaldehyde-fixed 90% methanol permeabilized mouse blood cells labeling Myeloperoxidase with ab300650 at 1/1000 dilution (0.1µg)/ Right compared with a rat monoclonal IgG / Left. Goat F(ab)2 Anti-Rat IgG Fc (Alexa Fluor® 488, ab150161) at 1/2000 dilution was used as the secondary antibody.

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