abcam

ab11730

PE Anti-Myeloperoxidase antibody [2C7]

Anti-Myeloperoxidase antibody [2C7] conjugated to PE - suitable for flow cytometry, and reacts with human samples. Clone [2C7] is a mouse monoclonal antibody cited in 14 publications.

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Key facts

Isotype	IgG1
Host species	Mouse
Conjugation	PE
Excitation/Emission	Ex: 480;565nm, Em: 578nm
Storage buffer	pH: 7.4 Preservative: 0.09% Sodium azide Constituents: PBS, 5% Sucrose, 1% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	Recombinant Full Length Protein corresponding to Human MPO. Database link P05164
Clone number	2C7
Purification technique	Affinity purification Protein G
Purification notes	Purified IgG prepared by affinity chromatography.

Reactivity data

Flow Cyt

Expected

Species	Human

Dilution info	1 µL for 10^6 Cells
Notes	ab91357 - Mouse monoclonal IgG1, is suitable for use as an isotype control with this antibody. Use 10 µl of undiluted antibody to label 10^6 cells in 100 µl. This antibody may be used for the flow cytometric detection of myeloid cells following membrane permeablisation.

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 conditions	+4°C
Appropriate long-term storage conditions	+4°C

Notes

This product should be stored undiluted. This product is photosensitive and should be protected from light. Should this product contain a precipitate we recommend microcentrifugation before use.

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

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