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Anti-MPO Antibody

Catalog # ABO10540

Product Information

Application	WB, IHC-P
Primary Accession	P05164
Host	Rabbit
Reactivity	Human, Mouse, Rat
Clonality	Polyclonal
Format	Lyophilized
Description	Rabbit IgG polyclonal antibody for Myeloperoxidase(MPO) detection. Tested with WB, IHC-P in Human;Mouse;Rat.
Reconstitution	Add 0.2ml of distilled water will yield a concentration of 500ug/ml.

Additional Information

Gene ID	4353
Other Names	Myeloperoxidase, MPO, 1.11.2.2, Myeloperoxidase, 89 kDa myeloperoxidase, 84 kDa myeloperoxidase, Myeloperoxidase light chain, Myeloperoxidase heavy chain, MPO
Calculated MW	83869
Application Details	Immunohistochemistry(Paraffin-embedded Section), 0.5-1 □g/ml, Human, Rat, Mouse, By Heat Western blot, 0.1-0.5 □g/ml, Human, Rat, Mouse
Subcellular Localization	Lysosome.
Source	Eukaryota
Protein Name	Myeloperoxidase(MPO)
Contents	Each vial contains 5mg BSA, 0.9mg NaCl, 0.2mg Na2HPO4, 0.05mg Thimerosal, 0.05mg NaN3.
Immunogen	A synthetic peptide corresponding to a sequence at the C-terminus of human MPO (714-728aa KNNIFMSNSYPRDFV), different from the related mouse and rat sequences by one amino acid.
Purification	Immunogen affinity purified.
Cross Reactivity	No cross reactivity with other proteins

Storage	At -20˚C for one year. After r˚Constitution, at 4˚C for one month. It˚Can also be aliquotted and stored frozen at -20˚C for a longer time.Avoid repeated freezing and thawing.
Sequence Similarities	Belongs to the peroxidase family. XPO subfamily.

Protein Information

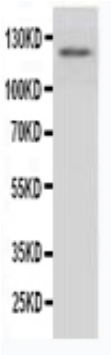
Name	MPO {ECO:0000303|PubMed:21880720, ECO:0000312|HGNC:HGNC:7218}
Function	Peroxidase that plays a central role in the host defense system of polymorphonuclear leukocytes by mediating both (1) formation of neutrophil extracellular trap (NETs) and (2) microbicidal activity (PubMed:16125131, PubMed:17438335, PubMed:20974672, PubMed:20974816, PubMed:22131345, PubMed:25066128, PubMed:28574339, PubMed:40963017, PubMed:4978299, PubMed:6295491). Promotes NET formation by mediating chromatin disassembly: translocates to the nucleus and specifically binds to nucleosomes, both as monomer and homodimer, leading to nucleosome unstacking and initial chromatin decondensation (PubMed:40963017). Homodimers clash with one end of the nucleosomal DNA, leading to DNA unwrapping, initiating complete disassembly of nucleosomes and chromatin transformation into NETs in an ATP-independent manner (PubMed:40963017). NETs, which are mainly composed of DNA fibers and globular proteins, are then extruded into the extracellular space by neutrophils to trap pathogens and release antimicrobial proteins to destroy them (PubMed:40963017). Participates to the microbicidal activity against a wide range of organisms by acting as a peroxidase that catalyzes the formation of oxidants in presence of hydrogen peroxide (PubMed:16125131, PubMed:17074761, PubMed:17438335, PubMed:21880720, PubMed:22131345, PubMed:22352991, PubMed:22902565, PubMed:24194519, PubMed:33273015, PubMed:9359420, PubMed:9922160). Mediates the formation of hypohalous acids, mainly hypochlorous acid (HOCl) in physiologic situations, that greatly enhance polymorphonuclear leukocyte microbicidal activity (PubMed:16125131, PubMed:17074761, PubMed:17438335, PubMed:19608745, PubMed:21880720, PubMed:22902565, PubMed:24194519, PubMed:9359420, PubMed:9922160). In addition to hypochlorous acid, catalyzes formation of hypobromous acid (HOBr), hypoiodous acid (HOI) and hypothiocyanous acid (HOSCN) (PubMed:1318692, PubMed:16125131, PubMed:17438335, PubMed:19608745, PubMed:6295491, PubMed:9359420). Also catalyzes oxidation of nitrite into the highly reactive nitrogen dioxide radical (PubMed:10777476, PubMed:8385644, PubMed:9450756). Formation of oxidants are widely believed to be responsible for much of the anti-bactericidal activity of neutrophils (PubMed:8385644, PubMed:9450756). Oxidants, such as hypochlorous acid or nitrogen dioxide radical, can also oxidize amino acid residues on proteins and generate chlorination and nitration post-translational modifications, respectively (PubMed:15314690, PubMed:15326314, PubMed:15498770, PubMed:15574409, PubMed:16091367, PubMed:7622459). Chlorination and nitration of the lipid-free form of APOA1 impairs cholesterol transport (PubMed:15326314, PubMed:15498770, PubMed:15574409). Superoxides generated by MPO can also promote dioxygenation of tryptophan residues on proteins (PubMed:16091367, PubMed:40081572). Also able to oxidize melatonin into N1-acetyl-N2-formyl-5-methoxykynuramine either in presence of hydrogen peroxide or superoxide (PubMed:15636586, PubMed:16148002). Oxidizes urate into 5-hydroxyisourate (PubMed:21266577). Functions as a nitric oxide (NO) oxidase during inflammation, by catalytically consuming NO, impairing NO's ability to maintain vascular tone and function (PubMed:12089442). May also mediate 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).
Cellular Location	Lysosome. Cytolytic granule. Cytoplasmic vesicle, phagosome. Secreted. Nucleus. Chromosome Note=Localizes to azurophil granules, a type of primary lysosome found in neutrophils and monocytes that contains antimicrobial proteins (PubMed:25066128, PubMed:2981589, PubMed:6095812, PubMed:6192815). A substantial fraction is also constitutively secreted by normal bone marrow granulocyte precursors (PubMed:6095812). During formation of neutrophil extracellular traps (NETs), translocates into the nucleus and associates to chromatin, leading to chromatin dislocation and its transformation into NETs (PubMed:25066128, PubMed:40963017). Core component of NETs (PubMed:22131345, PubMed:32434865, PubMed:40963017)
Tissue Location	Specifically expressed in neutrophils and monocytes.

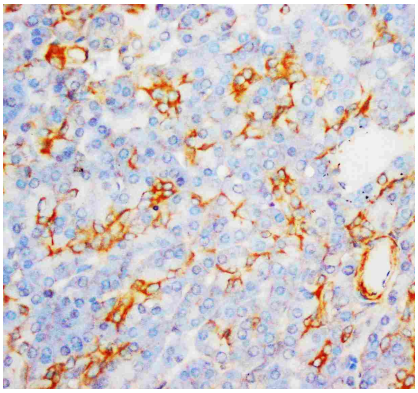
Background

Myeloperoxidase(MPO) is a mammalian phagocyte hemoprotein though to primarily mediate host defense reactions. It is abundantly expressed in neutrophils and secreted during their activation. Myeloperoxidase is part of the host defense system of human polymorphonuclear leukocytes, responsible for microbicidal activity against a wide range of organisms. It is located in the nucleus as well as in the cytoplasm. Intranuclear MPO may help to protect DNA against damage resulting from oxygen radicals produced during myeloid cell maturation and function.

Images



Anti-MPO antibody, ABO10540, Western blottingWB: Rat Brain Tissue Lysate



Anti-MPO antibody, ABO10540, IHC(P)IHC(P): Human Liver Cancer Tissue

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