SANTA CRUZ BIOTECHNOLOGY, INC.

MPO light chain (A-5): sc-365436

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The heme protein myeloperoxidase (MPO) is a major component of azurophilic granules of neutrophils and polymorphonuclear leukocytes. Optimal oxygen-dependent microbiocidal activity depends on MPO as the critical enzyme for the generation of hypochlorous acid and other toxic oxygen products. The MPO precursor is synthesized during the promyelocytic stage of myeloid differentiation and is subsequently processed and transported intracellularly to the lysosomes. The precursor undergoes cotranslational N-linked glycosylation to produce a glycoprotein. Glucosidases in the endoplasmic reticulum (ER) or early *cis*-Golgi convert the pro-MPO to a form which is sorted into a prelysosomal compartment, which undergoes final proteolytic maturation to native MPO, a pair of heavy-light protomers. In normal neutrophils, MPO is expressed as a dimer. Calreticulin, a calcium-binding protein residing in the ER, interacts specifically with fully glycosylated apopro-MPO. iMPO mRNAis abundant in human promyelocytic HL-60 and mouse myeloid leukemia NFS-60 cells. MPO is expressed at high levels in circulating neutrophils and monocytes but is not detectable in microglia, brain-specific macrophages or normal brain tissue.

REFERENCES

1. Johnson, K.R., et al. 1987. Characterization of cDNA clones for human myeloperoxidase: predicted amino acid sequence and evidence for multiple mRNA species. Nucleic Acids Res. 15: 2013-2028.
2. Nauseef, W.M. 1987. Postranslational processing of a human myeloid lysosomal protein, myeloperoxidase. Blood 70: 1143-1150.
3. Morishita, K., et al. 1987. Molecular cloning and characterization of cDNA for human myeloperoxidase. J. Biol. Chem. 262: 3844-3851.

CHROMOSOMAL LOCATION

Genetic locus: MPO (human) mapping to 17q22.

SOURCE

MPO light chain (A-5) is a mouse monoclonal antibody raised against amino acids 165-278 mapping within an internal region of MPO of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

MPO light chain (A-5) is available conjugated to agarose (sc-365436 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-365436 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-365436 PE), fluorescein (sc-365436 FITC), Alexa Fluor® 488 (sc-365436 AF488), Alexa Fluor® 546 (sc-365436 AF546), Alexa Fluor® 594 (sc-365436 AF594) or Alexa Fluor® 647 (sc-365436 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-365436 AF680) or Alexa Fluor® 790 (sc-365436 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

APPLICATIONS

MPO light chain (A-5) is recommended for detection of MPO light chain of human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for MPO siRNA (h): sc-43941, MPO shRNA Plasmid (h): sc-43941-SH and MPO shRNA (h) Lentiviral Particles: sc-43941-V.

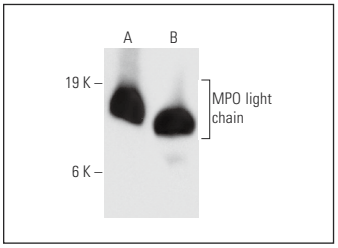
Molecular Weight of MPO light chain: 15 kDa.

Molecular Weight of mature MPO: 84 kDa.

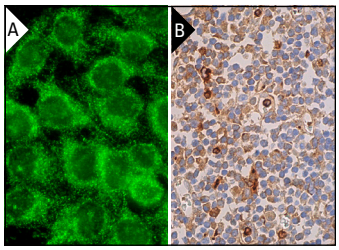
Molecular Weight of MPO dimer: 140 kDa.

Positive Controls: HL-60 whole cell lysate: sc-2209, SK-N-SH cell lysate: sc-2410 or MCF7 whole cell lysate: sc-2206.

DATA



MPO light chain (A-5): sc-365436. Western blot analysis of MPO light chain expression in HL-60 (**A**) and human PBL (**B**) whole cell lysates.



MPO light chain (A-5): sc-365436. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human lymph node tissue showing cytoplasmic and membrane staining of subset of cells in non-germinal center (**B**).

SELECT PRODUCT CITATIONS

1. Bonne-Année, S., et al. 2014. Extracellular traps are associated with human and mouse neutrophil and macrophage mediated killing of larval *Strongyloides stercoralis*. Microbes Infect. 16: 502-511.
2. Chen, Y.T., et al. 2022. Methotrexate inhibition of SARS-CoV-2 entry, infection and inflammation revealed by bioinformatics approach and a hamster model. Front. Immunol. 13: 1080897.
3. Chin, Y.F., et al. 2022. Orally delivered perilla *(Perilla frutescens)* leaf extract effectively inhibits SARS-CoV-2 infection in a Syrian hamster model. J. Food Drug Anal. 30: 252-270.
4. Kida, Y., et al. 2023. Urokinase-type plasminogen activator blockade ameliorates experimental colitis in mice. Sci. Rep. 13: 2899.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.