SANTA CRUZ BIOTECHNOLOGY, INC.

MPO light chain (P-14): sc-34158

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 mRNA is 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

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2. Nauseef, W.M. 1987. Postranslational processing of a human myeloid lysosomal protein, myeloperoxidase. Blood 70: 1143-1150.
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4. Nauseef, W.M., et al. 1988. Biosynthesis and processing of myeloperoxidase a marker for myeloid cell differentiation. Eur. J. Haematol. 40: 97-110.
5. Homma, T., et al. 1989. Preparation and characterization of monoclonal antibodies against human myeloperoxidase. Arch. Biochem. Biophys. 273: 189-196.
6. Zuurbier, K.W., et al. 1992. Human hemi-myeloperoxidase. Initial chlorinating activity at neutral pH, compound II and III formation, and stability towards hypochlorous acid and high temperature. Eur. J. Biochem. 205: 737-742.
7. Nauseef, W.M., et al. 1995. Calreticulin functions as a molecular chaperone in the biosynthesis of myeloperoxidase. J. Biol. Chem. 270: 4741-4747.
8. Reynolds, W.F., et al. 1999. Myeloperoxidase polymorphism is associated with gender specific risk for Alzheimer's disease. Exp. Neurol. 155: 31-41.

CHROMOSOMAL LOCATION

Genetic locus: MPO (human) mapping to 17q22; Mpo (mouse) mapping to 11 C.

SOURCE

MPO light chain (P-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of MPO of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-34158 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

MPO light chain (P-14) is recommended for detection of MPO light chain of human and, to a lesser extent, mouse and rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

MPO light chain (P-14) is also recommended for detection of MPO light chain in additional species, including canine.

Suitable for use as control antibody for MPO siRNA (h): sc-43941, MPO siRNA (m): sc-43942, MPO shRNA Plasmid (h): sc-43941-SH, MPO shRNA Plasmid (m): sc-43942-SH, MPO shRNA (h) Lentiviral Particles: sc-43941-V and MPO shRNA (m) Lentiviral Particles: sc-43942-V.

Molecular Weight of MPO heavy-light protomer: 72 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.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

STORAGE

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

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.