SANTA CRUZ BIOTECHNOLOGY, INC.

MPO (16G6): sc-66107

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

1. Nauseef, W.M. 1987. Postranslational processing of a human myeloid lysosomal protein, myeloperoxidase. Blood 70: 1143-1150.
2. Morishita, K., et al. 1987. Molecular cloning and characterization of cDNA for human myeloperoxidase. J. Biol. Chem. 262: 3844-3851.
3. 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.
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.

SOURCE

MPO (16G6) is a mouse monoclonal antibody raised against purified MPO of human origin.

RESEARCH USE

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

PRODUCT

Each vial contains 100 µg IgG_1 in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

MPO (16G6) is recommended for detection of MPO of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)].

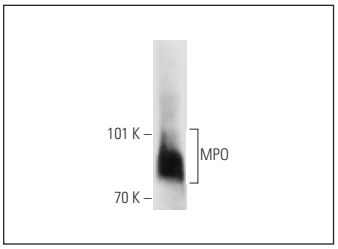
Suitable for use as control antibody for MPO siRNA (h): sc-43941, MPO shRNA Plasmid (h): sc-43941-SH and MPO shRNA (h) Lentiviral Particles: sc-43941-V.

Molecular Weight of MPO 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.

DATA



MPO (16G6): sc-66107. Western blot analysis of MPO expression in HL-60 whole cell lysate.

STORAGE

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

PROTOCOLS

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

CONJUGATES

See **MPO light chain (A-5): sc-365436** for MPO light chain antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.