Human Myeloperoxidase/MPO Antibody

Antigen Affinity-purified Polyclonal Goat IgG
Catalog Number: AF3174

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human Myeloperoxidase/MPO in direct ELISAs and Western blots. In direct ELISAs, less than 30% cross-reactivity with recombinant mouse MPO is observed and less than 10% cross-reactivity with recombinant human Eosinophil Peroxidase (EPPO) is observed.
Source	Polyclonal Goat IgG
Purification	Antigen Affinity-purified
Immunogen	Human polymorphonuclear leukocytes Myeloperoxidase and mouse myeloma cell line NS0-derived recombinant human Myeloperoxidase/MPO Ala49-Ser745 Accession # P05164
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied either lyophilized or as a 0.2 µm filtered solution in PBS.

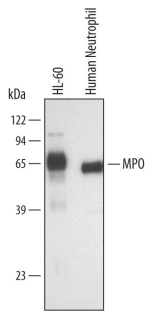
APPLICATIONS

Please Note: *Optimal dilutions should be determined by each laboratory for each application. General Protocols are available in the Technical Information section on our website.*

	Recommended Concentration	Sample
Western Blot	0.5 µg/mL	See Below
Immunocytochemistry	5-15 µg/mL	Immersion fixed HL-60 human acute promyelocytic leukemia cell line
Simple Western	5 µg/mL	See Below

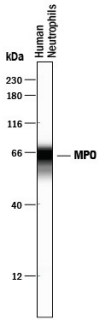
DATA

Western Blot



Detection of Human Myeloperoxidase/MPO by Western Blot. Western blot shows lysates of HL-60 human acute promyelocytic leukemia cell line and human neutrophil. PVDF membrane was probed with 0.5 µg/mL of Goat Anti-Human Myeloperoxidase/MPO Antigen Affinity-purified Polyclonal Antibody (Catalog # AF3174) followed by HRP-conjugated Anti-Goat IgG Secondary Antibody (Catalog # Catalog # HAF019). A specific band was detected for Myeloperoxidase/MPO at approximately 60-65 kDa (as indicated). This experiment was conducted under reducing conditions and using Immunoblot Buffer Group 2.

Simple Western



Detection of Human Myeloperoxidase/MPO by Simple Western™. Simple Western lane view shows lysates of human neutrophils, loaded at 0.2 mg/mL. A specific band was detected for Myeloperoxidase/MPO at approximately 65 kDa (as indicated) using 5 µg/mL of Goat Anti-Human Myeloperoxidase/MPO Antigen Affinity-purified Polyclonal Antibody (Catalog # AF3174) followed by 1:50 dilution of HRP-conjugated Anti-Goat IgG Secondary Antibody (Catalog # Catalog # HAF109). This experiment was conducted under reducing conditions and using the 12-230 kDa separation system.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.2 mg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. *Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** • 12 months from date of receipt, -20 to -70 °C as supplied. • 1 month, 2 to 8 °C under sterile conditions after reconstitution. • 6 months, -20 to -70 °C under sterile conditions after reconstitution.

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BACKGROUND

Myeloperoxidase (MPO) is a heme-containing enzyme belonging to the XPO subfamily of peroxidases. It is an abundant neutrophil and monocyte glycoprotein that catalyzes the hydrogen peroxide-dependent conversion of chloride, bromide, and iodide to multiple reactive species (1). Post-translational processing of MPO involves the insertion of a heme moiety and the proteolytic removal of both a propeptide and a 6 aa internal peptide (2). This results in a disulfide-linked dimer composed of a 60 kDa heavy and 12 kDa light chain that associate into a 150 kDa enzymatically active tetramer. The tetramer contains two heme groups and one disulfide bond between the heavy chains (2). Alternate splicing generates two additional isoforms of MPO, one with a 32 aa insertion in the light chain, and another with a deletion of the signal sequence and part of the propeptide (3). Human and mouse MPO share 87% aa sequence identity. MPO activity results in protein nitrosylation and the formation of 3-chlorotyrosine and dityrosine crosslinks (4-6). Modification of ApoB100, as well as the lipid and cholesterol components of LDL and HDL, promotes the development of atherosclerosis (5, 7-9). MPO is also associated with a variety of other diseases (1), and inhibits vasodilation in inflammation by depleting the levels of NO (10). Serum albumin functions as a carrier protein during MPO movement to the basolateral side of epithelial cells (11). MPO is stored in neutrophil azurophilic granules. Upon cellular activation, it is deposited into pathogen-containing phagosomes (2). While mice lacking MPO are impaired in clearing select microbial infections, MPO deficiency in humans does not necessarily result in heightened susceptibility to infections (12, 13).

References:

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