PRODUCT INFORMATION

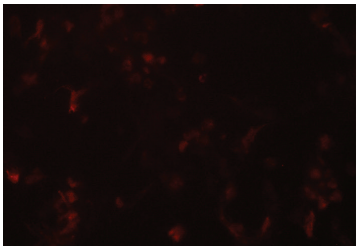
Myeloperoxidase Monoclonal Antibody (Clone 5F6)

Item No. 15640

Overview and Properties

Contents:	This vial contains 200 µg of affinity-purified monoclonal antibody.
Synonym:	MPO
Species Reactivity:	(+) Human, mouse; other species not tested
Storage:	-20°C (as supplied)
Stability:	≥3 years
Storage Buffer:	200 µl PBS, pH 7.2, with 50% glycerol, 0.5 mg/ml BSA, and 0.02% sodium azide
Clone:	5F6
Host:	Mouse
Isotype:	IgG2b
Applications:	Immunofluorescence (IF); the recommended starting dilution for IF is 1:50. Other applications were not tested, therefore optimal working concentration/dilution should be determined empirically.

Image



Human peripheral blood neutrophils were isolated by density gradient separation and incubated for four hours on 24-well plates in the presence of PMA or A-23187. The resulting extracellular traps were incubated with a 1:50 dilution of the MPO Monoclonal Antibody (Clone 5F6), followed by incubation with PE labeled goat anti-mouse IgG (H+L)+IgM secondary antibody and fixation with 1% formaldehyde (washed between steps).

Refer to Cayman's Neutrophil Extracellular Trap (NET) Assay Kit booklet (Item No. 601010) for more information regarding protocol.

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Description

Myeloperoxidase (MPO) is a heme-containing enzyme and the most abundant protein in polymorphonuclear leukocytes (PMNs).[1] It is comprised of two subunits linked by a disulfide bridge with each subunit containing a light and a heavy polypeptide chain. It can oxidize a variety of substrates and catalyzes the formation of highly reactive (pseudo)hypohalous acids and radicals, including hypochlorous acid. MPO is stored in azurophilic granules of PMNs and is released from activated or necrotic PMNs, after which it can bind to and modify acidic serum proteins, as well as recruit additional PMNs. MPO also has roles in PMN apoptosis and antimicrobial defense systems, including neutrophil extracellular traps (NETs).[1-3] MPO-deficient mice exhibit reduced survival in a polymicrobial sepsis model, increased susceptibility to experimental autoimmune encephalomyelitis (EAE), and increased atherosclerosis in mice also deficient in the LDL receptor and fed an atherogenic diet.[1,4,5] Cayman's Myeloperoxidase Monoclonal Antibody (Clone 5F6) was developed by fusing the spleen of a non-immunized NZBWF1 mouse with a mouse myeloma cell line and can be used for immunofluorescence (IF) applications.

References

1. Arnhold, J. and Flemmig, J. Human myeloperoxidase in innate and acquired immunity. *Arch. Biochem. Biophys.* **500(1)**, 92-106 (2010).
2. Metzler, K.D., Fuchs, T.A., Nauseef, W.M., *et al.* Myeloperoxidase is required for neutrophil extracellular trap formation: Implications for innate immunity. *Blood* **117(3)**, 953-959 (2011).
3. Urban, C.F., Ermert, D., Schmid, M., *et al.* Neutrophil extracellular traps contain calprotectin, a cytosolic protein complex involved in host defense against Candida albicans. *PLoS Pathogens* **5(10)**, 1-18 (2009).
4. Brennan, M., Gaur, A., Pahuja, A., *et al.* Mice lacking myeloperoxidase are more susceptible to experimental autoimmune encephalomyelitis. *J. Neuroimmunol.* **112(1-2)**, 97-105 (2001).
5. Brennan, M.L., Anderson, M.M., Shih, D.M., *et al.* Increased atherosclerosis in myeloperoxidase-deficient mice. *J. Clin. Invest.* **107(4)**, 419-430 (2001).

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