Human Hemopexin Antibody

Monoclonal Mouse IgG_1 Clone # 698813

Catalog Number: MAB4490

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human Hemopexin in direct ELISAs and Western blots. In Western blots, approximately 5-10% cross-reactivity with recombinant human MMP-1, -3, -10, -12, and -13 is observed.
Source	Monoclonal Mouse IgG_1 Clone # 698813
Purification	Protein A or G purified from ascites
Immunogen	Mouse myeloma cell line NS0-derived recombinant human Hemopexin Thr24-His462 Accession # P02790
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.

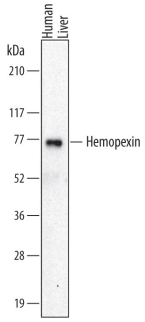
APPLICATIONS

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	1 µg/mL	See Below
Immunohistochemistry	8-25 µg/mL	See Below

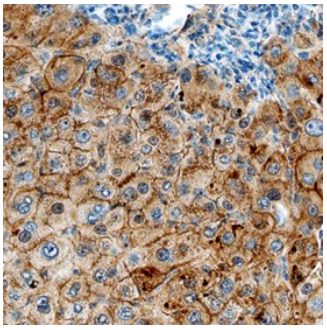
DATA

Western Blot



Detection of Human Hemopexin by Western Blot. Western blot shows lysates of human liver tissue. PVDF membrane was probed with 1 µg/mL of Mouse Anti-Human Hemopexin Monoclonal Antibody (Catalog # MAB4490) followed by HRP-conjugated Anti-Mouse IgG Secondary Antibody (Catalog # HAF007). A specific band was detected for Hemopexin at approximately 75 kDa (as indicated). This experiment was conducted under reducing conditions and using Immunoblot Buffer Group 5.

Immunohistochemistry



Hemopexin in Human Liver. Hemopexin was detected in immersion fixed paraffin-embedded sections of human liver using Mouse Anti-Human Hemopexin Monoclonal Antibody (Catalog # MAB4490) at 15 µg/mL overnight at 4 °C. Before incubation with the primary antibody, tissue was subjected to heat-induced epitope retrieval using Antigen Retrieval Reagent-Basic (Catalog # CTS013). Tissue was stained using the Anti-Mouse HRP-DAB Cell & Tissue Staining Kit (brown; Catalog # CTS002) and counterstained with hematoxylin (blue). Specific staining was localized to plasma membranes of hepatocytes. View our protocol for Chromogenic IHC Staining of Paraffin-embedded Tissue Sections.

PREPARATION AND STORAGE

Reconstitution	Sterile PBS to a final concentration of 0.5 mg/mL.
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.

BACKGROUND

Hemopexin (HPX) is a 60 kDa plasma glycoprotein with two four-bladed β-propeller folds. This structural motif has been found in other proteins including collagenases and provides sites for protein-protein interactions (1-3). The liver is the major synthesizing organ. Expression in the central nervous system, in the retina, and in peripheral nerves has also been observed. Hemopexin belongs to the family of the acute-phase proteins whose synthesis is induced after an inflammatory event. Hemopexin participates in maintaining and recycling the iron pool by utilizing its high binding affinity toward heme composed of protoporphyrin IX and iron. It also functions in preventing oxidation caused by heme after hemolysis. Hydrophobic heme molecules can intercalate into lipid membranes and participate in the oxidation of lipid membrane components through the Fenton reaction resulting in lipid peroxidation. Hemopexin undergoes a conformational change upon the binding of heme. The conformational change allows hemopexin to interact with a specific receptor, forming a complex which is then internalized. In the plasma, it is likely that heme binds albumin (35-55 g/L) first because of the higher concentration of albumin in plasma than hemopexin (0.5-1.2 g/L), and is then transferred to hemopexin, which has a much higher affinity (K_d ~ 1 pM) toward heme. Heme concentrations in plasma increase after hemolysis, which is associated with several pathological conditions such as reperfusion injury and ischemia.

References:

1. Tolosano, E. and Altruda, F. (2002) DNA and Cell Biol. **21**:297.
2. Mauk, M. R. *et al.* (2007) Nature Pro. Rep. **24**:523.
3. Ascenzi, P. *et al.* (2005) IUMB Life. **57**:749.

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Global bio-techne.com info@bio-techne.com techsupport@bio-techne.com TEL +1 612 379 2956
USA TEL 800 343 7475 Canada TEL 855 668 8722 China TEL +86 (21) 52380373
Europe | Middle East | Africa TEL +44 (0)1235 529449