

Anti-HO-1 Monoclonal Antibody

Catalog Number: M00253-2

About HO-1

Heme-oxygenase is a ubiquitous enzyme that catalyzes the initial and rate-limiting steps in heme catabolism yielding equimolar amounts of biliverdin, iron and carbon monoxide. Biliverdin is subsequently converted to bilirubin and the free iron is sequestered to ferritin (1). These products have important physiological effects as carbon monoxide is a potent vasodilator; biliverdin and bilirubin are potent antioxidants; and the free iron increases oxidative stress and regulates the expression of many mRNAs (2). There are three isoforms of heme-oxygenase, HO-1, HO-2 and HO-3; however HO-1 and HO-2 are the major isoforms as they both have been identified in mammals (3). HO-1, also known as heat shock protein 32, is an inducible isoform activated by most oxidative stress inducers, cytokines, inflammatory agents and heat shock. HO-2 is a constitutive isoform which is expressed under homeostatic conditions. HO-1 is also considered to be a cytoprotective factor in that free heme is highly reactive and cytotoxic, and secondly, carbon monoxide is a mediator inhibiting the inflammatory process and bilirubin is a scavenger for reactive oxygen, both of which are the end products of heme catalyzation (4). It has also been shown that HO-1 deficiency may cause reduced stress defense, a pro-inflammatory tendency (5), susceptibility to atherosclerotic lesion formation (6), endothelial cell injury, and growth retardation (7). Up-regulation of HO-1 is therefore said to be one of the major defense mechanisms of oxidative stress (4).

Overview

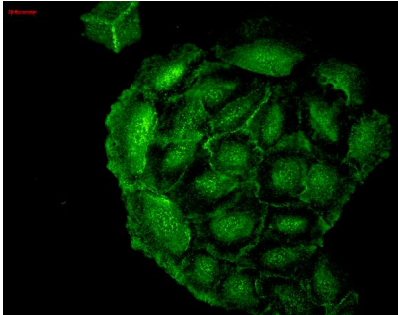
Product Name	Anti-HO-1 Monoclonal Antibody
Reactive Species	Bovine, Dog, Guinea pig, Hamster, Human, Monkey, Mouse, Pig, Rabbit, Rat
Description	Boster Bio Anti-HO-1 Monoclonal Antibody catalog # M00253-2. Tested in ELISA, IP, IF, IHC, WB applications. This antibody reacts with Human, Mouse, Rat.
Application	ELISA, IP, IF, IHC, ICC, WB
Clonality	Monoclonal 1F12-A6
Formulation	PBS pH7.4, 50% glycerol, 0.09% sodium azide
Storage Instructions	Store at -20°C for one year. Avoid repeated freeze-thaw cycles.
Host	Mouse
Uniprot ID	P09601

Technical Details

Immunogen	Human HO-1 synthetic peptide, amino acids 1-30
Predicted Reactive Species	Bovine, Mammalian
Cross Reactivity	Detects 32kDa. Does not cross-react with HO-2.
Isotype	IgG1 Kappa

Form	liquid
Concentration	1 mg/ml
Purification	Protein G Purified
Suggested Dilutions	Dilute the sample so that the expected range of concentrations fall within the detection range of this kit. If the expected range of concentration is unknown, a pilot test should be conducted to decide the optimal dilution ratio for your samples. Some PubMed article(s) citing the expression level of this target are as follows: Boster Bio's internal QC testing used: WB (1:1000), IHC (1:100), ICC/IF (1:100); optimal dilutions for assays should be determined by the user.

Anti-HO-1 Monoclonal Antibody (M00253-2) Images



Immunocytochemistry/Immunofluorescence analysis using Mouse Anti-HO-1 Monoclonal Antibody, Clone 1F12-A6 (M00253-2). Tissue: HaCaT cells. Species: Human. Fixation: Cold 100% methanol for 10 minutes at -20°C. Primary Antibody: Mouse Anti-HO-1 Monoclonal Antibody (M00253-2) at 1:100 for 1 hour at RT. Secondary Antibody: FITC Goat Anti-Mouse (green) at 1:50 for 1 hour at RT. Localization: Cell-cell border staining in epidermis, punctuate nuclear staining. .

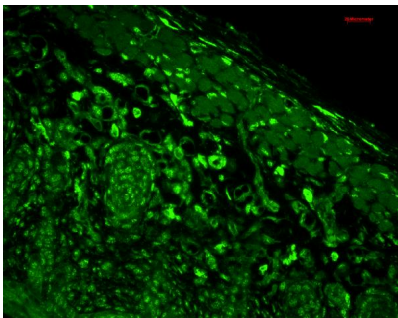


Figure 2. IHC analysis of HMOX1 using anti-HMOX1 antibody (M00253-2). HMOX1 was detected in paraffin-embedded section. Heat mediated antigen retrieval was performed in citrate buffer (pH6, epitope retrieval solution) for 20 mins. The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 1ug/ml rabbit anti-HMOX1 Antibody (M00253-2) overnight at 4°C. Biotinylated goat anti-Mouse IgG antibody was used as secondary antibody and incubated for 30 minutes at 37°C. The tissue section was developed using Streptavidin-Biotin-Complex (SABC)(Catalog # SA1021) with DAB as the chromogen.

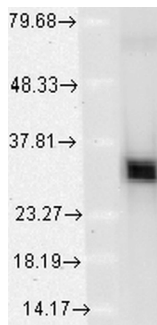
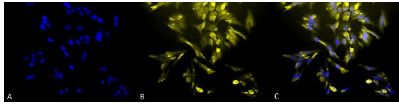


Figure 4. Western blot analysis of HMOX1 using anti-HMOX1 antibody (M00253-2).

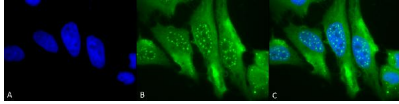
Electrophoresis was performed on a 5-20% SDS-PAGE gel at 70V (Stacking gel) / 90V (Resolving gel) for 2-3 hours. The sample well of each lane was loaded with 50ug of sample under reducing conditions.

After Electrophoresis, proteins were transferred to a Nitrocellulose membrane at 150mA for 50-90 minutes. Blocked the membrane with 5% Non-fat Milk/ TBS for 1.5 hour at RT. The membrane was incubated with rabbit anti-HMOX1 antigen affinity purified polyclonal antibody (Catalog # M00253-2) at 0.5 ug/mL overnight at 4°C, then washed with TBS-0.1%Tween 3 times with 5 minutes each and probed with a goat anti-Mouse IgG-HRP secondary antibody at a dilution of 1:10000 for 1.5 hour at RT. The signal is developed using an Enhanced Chemiluminescent detection (ECL) kit (Catalog # SA1021) with Tanon 5200 system. A specific band was detected for HMOX1.

Immunocytochemistry/Immunofluorescence analysis using Mouse Anti-HO-1 Monoclonal Antibody, Clone 1F12-A6 (M00253-2). Tissue: HeLa Cells. Species: Human. Fixation: 2% Formaldehyde for 20 min at RT. Primary Antibody: Mouse Anti-HO-1 Monoclonal Antibody (M00253-2) at 1:100 for 12 hours at 4°C. Secondary Antibody: R-PE Goat Anti-Mouse (yellow) at 1:200 for 2 hours at RT. Counterstain: DAPI (blue) nuclear stain at 1:40000 for 2 hours at RT. Localization: Microsome. Endoplasmic reticulum. Localizes to the nucleus



upon hypoxia. Magnification: 20x. (A) DAPI (blue) nuclear stain. (B) Anti-HO-1 Antibody. (C) Composite.



Immunocytochemistry/Immunofluorescence analysis using Mouse Anti-HO-1 Monoclonal Antibody, Clone 1F12-A6 (M00253-2) . Tissue: HeLa Cells. Species: Human. Fixation: 2% Formaldehyde for 20 min at RT. Primary Antibody: Mouse Anti-HO-1 Monoclonal Antibody (M00253-2) at 1:100 for 12 hours at 4°C. Secondary Antibody: FITC Goat Anti-Mouse (green) at 1:200 for 2 hours at RT. Counterstain: DAPI (blue) nuclear stain at 1:40000 for 2 hours at RT. Localization: Microsome. Endoplasmic reticulum. Localizes to the nucleus upon hypoxia. Magnification: 100x. (A) DAPI (blue) nuclear stain. (B) Anti-HO-1 Antibody. (C) Composite.

24 Publications Citing This Product

1. PubMed ID: 10.3892/etm.2020.8605, Inactivated pseudomonas aeruginosa protects against myocardial ischemia reperfusion injury via Nrf2 and HO γ 1
2. PubMed ID: 10.1016/j.jep.2018.01.033, Improvement of Cisplatin-induced renal dysfunction by Schisandra chinensis stems via anti-inflammation and anti-apoptosis effects
3. PubMed ID: 10.1021/acs.jafc.0c07046, Polyphenol-Rich Extract from Litchi chinensis Seeds Alleviates Hypertension-Induced Renal Damage in Rats

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