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Anti-HO-1 Antibody [1F12-A6]

Mouse Anti-Human HO-1 Monoclonal IgG1 Kappa
Catalog No. SMC-131



Discovery through partnership | Excellence through quality

Overview

Product Name

HO-1 Antibody

Description

Mouse Anti-Human HO-1 Monoclonal IgG1 Kappa

Species Reactivity

Dog, Human, Monkey, Mouse, Rat, Bovine, Guinea Pig (*Cavia porcellus*), Hamster, Pig, Rabbit

Applications

WB, IHC, ICC/IF, IP, ELISA

Antibody Dilution

WB (1:1000), IHC (1:100), ICC/IF (1:100); optimal dilutions for assays should be determined by the user.

Host Species

Mouse

Immunogen Species

Human

Immunogen

Human HO-1 synthetic peptide, amino acids 1-30

Concentration

1 mg/ml

Conjugates

Alkaline Phosphatase, APC, ATTO 390, ATTO 488, ATTO 565, ATTO 594, ATTO 633, ATTO 655, ATTO 680, ATTO 700, Biotin, FITC, HRP, PE/ATTO 594, PerCP, RPE, Streptavidin, Unconjugated

Properties

Storage Buffer

PBS pH7.4, 50% glycerol, 0.09% sodium azide

Storage Temperature

-20°C

Shipping Temperature

Blue Ice or 4°C

Purification

Protein G Purified

Clonality

Monoclonal

Clone Number

1F12-A6

Isotype

IgG1 Kappa

Specificity

Detects 32kDa. Does not cross-react with HO-2.

Cite This Product

Mouse Anti-Human HO-1 Monoclonal, Clone 1F12-A6 (StressMarq Biosciences Inc., Victoria BC CANADA, Catalog # SMC-131)

Certificate Of Analysis

1 µg/ml was sufficient for detection of HO-1 in 10 µg of mixed human cell line lysate by colorimetric immunoblot analysis using Goat Anti-Mouse IgG:HRP as the secondary.

Biological Description

Alternative Names

HSP32 Antibody, HMOX1 Antibody, Heme oxygenase 1 Antibody, HO Antibody, HO1 Antibody

Research Areas

Cancer, Oxidative Stress

Cellular Localization

Endoplasmic Reticulum, Microsome

Accession Number

NP_002124.1

Gene ID

3162

Swiss Prot

P09601

Scientific Background

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).

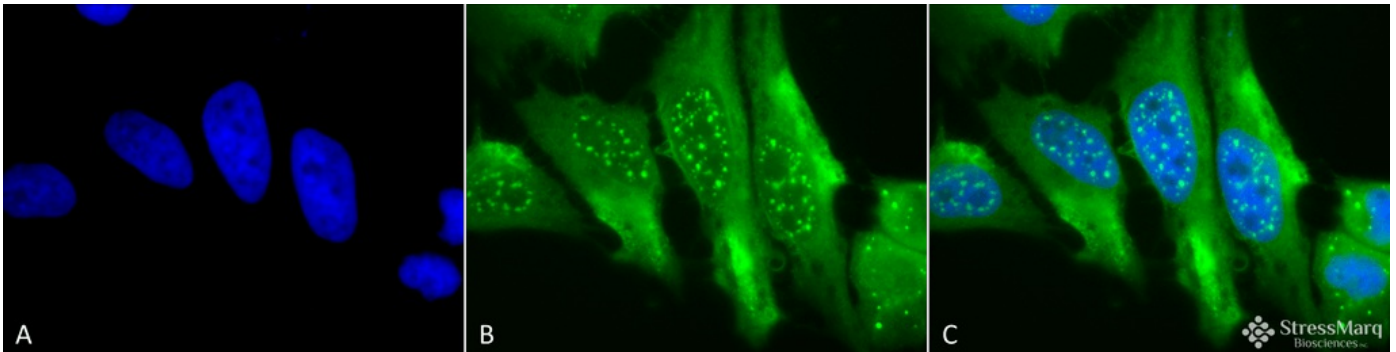
There are three isoforms of heme-oxygenase, HO-1, HO-2 and HO-3; however HO-1 and HO-2 are the major isoforms as they both have been identified in mammals (3). HO-1, also known as heat shock protein 32, is an inducible isoform activated by most oxidative stress inducers, cytokines, inflammatory agents 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).

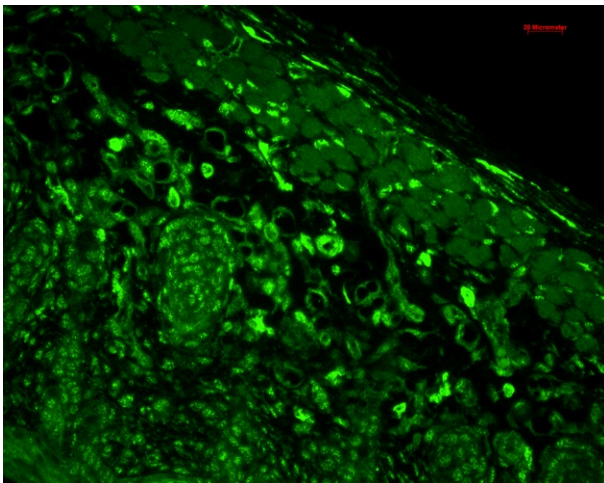
References

1. Froh M. et al. (2007) World J. Gastroenterol 13(25): 3478-86.
2. Elbirt K.K. and Bonkovsky H.L. (1999) Proc Assoc Am Physicians 111(5): 348-47.
3. Maines M.D., Trakshel G.M., and Kutty R.K. (1986) J Biol Chem 261: 411419.
4. Brydun A., et al. (2007) Hypertens Res 30(4): 341-8.
5. Poss K.D. and Tonegawa S. (1997). Proc Natl Acad Sci U S A. 94: 1092510930.
6. Yet S.F., et al. (2003) FASEB J. 17: 17591761.
7. Yachie A., et al. (1999) J Clin Invest. 103: 129135.

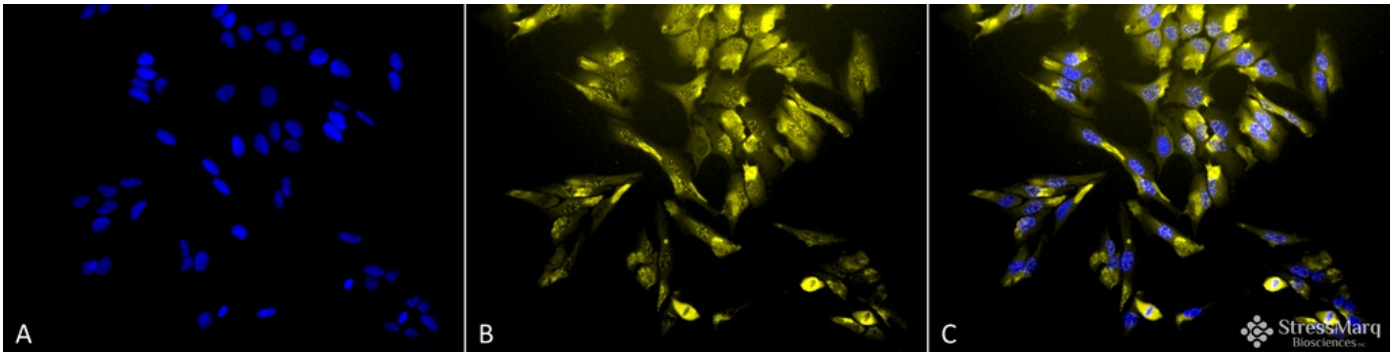
Product Images



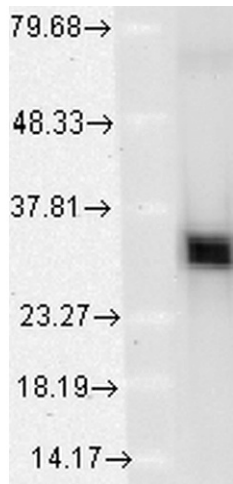
Immunocytochemistry/Immunofluorescence analysis using Mouse Anti-HO-1 Monoclonal Antibody, Clone 1F12-A6 (SMC-131). Tissue: HeLa Cells. Species: Human. Fixation: 2% Formaldehyde for 20 min at RT. Primary Antibody: Mouse Anti-HO-1 Monoclonal Antibody (SMC-131) at 1:100 for 12 hours at 4°C. Secondary Antibody: 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.



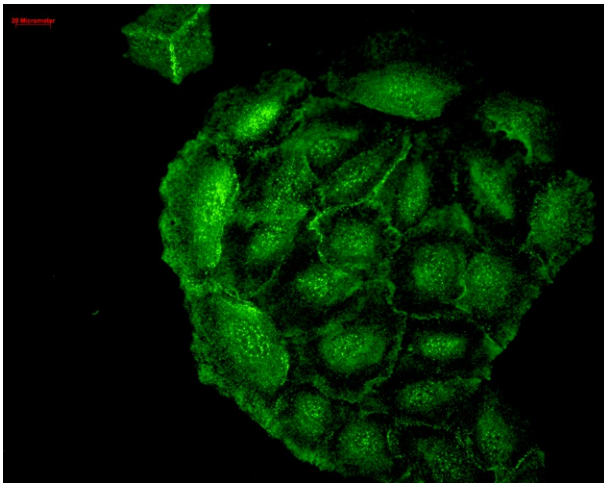
Immunohistochemistry analysis using Mouse Anti-HO-1 Monoclonal Antibody, Clone 1F12-A6 (SMC-131). Tissue: backskin. Species: Mouse. Fixation: Bouin's Fixative and paraffin-embedded. Primary Antibody: Mouse Anti-HO-1 Monoclonal Antibody (SMC-131) at 1:100 for 1 hour at RT. Secondary Antibody: FITC Goat Anti-Mouse (green) at 1:50 for 1 hour at RT. Localization: muscle, dermis, hair follicles, epidermis: nuclear everywhere and some cytoplasmic staining.



Immunocytochemistry/Immunofluorescence analysis using Mouse Anti-HO-1 Monoclonal Antibody, Clone 1F12-A6 (SMC-131). Tissue: HeLa Cells. Species: Human. Fixation: 2% Formaldehyde for 20 min at RT. Primary Antibody: Mouse Anti-HO-1 Monoclonal Antibody (SMC-131) 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.



Western Blot analysis of Human HeLa cell lysates showing detection of HO-1 protein using Mouse Anti-HO-1 Monoclonal Antibody, Clone 1F12-A6 (SMC-131). Load: 15 µg protein. Block: 1.5% BSA for 30 minutes at RT. Primary Antibody: Mouse Anti-HO-1 Monoclonal Antibody (SMC-131) at 1:1000 for 2 hours at RT. Secondary Antibody: Sheep Anti-Mouse IgG: HRP for 1 hour at RT.



Immunocytochemistry/Immunofluorescence analysis using Mouse Anti-HO-1 Monoclonal Antibody, Clone 1F12-A6 (SMC-131). Tissue: HaCaT cells. Species: Human. Fixation: Cold 100% methanol for 10 minutes at -20°C. Primary Antibody: Mouse Anti-HO-1 Monoclonal Antibody (SMC-131) at 1:100 for 1 hour at RT. Secondary Antibody: FITC Goat Anti-Mouse (green) at 1:50 for 1 hour at RT. Localization: Cellcell border staining in epidermis, punctate nuclear staining. .

Product Citations (4)

Western Blot

Nrf2 Activation Attenuates Both Orthodontic Tooth Movement and Relapse.

Kanzaki, H. et al. (2015) J Dent Res. 94(6):787-94.

PubMed ID: 25795629 **Reactivity:** Mouse **Applications:** Western Blot

Characterization of the Anti-inflammatory Activity of Enones Based on the Evaluation of Their Heme Oxygenase-1 and Inducible NO Synthase Activity.

Rucker, H. et al. (2015) Universität Regensburg. PhD Dissertation

PubMed ID: **Reactivity:** Mouse **Applications:** Western Blot

Nuclear Nrf2 Induction by Protein Transduction Attenuates Osteoclastogenesis.

Kanzaki, H. et al. (2014) Free Radic Biol Med. 77:239-48.

PubMed ID: 25224039 **Reactivity:** Mouse **Applications:** Western Blot

Opening or Closing the Lock? When Reactivity Is the Key to Biological Activity.

Al-Rifai, N., Rucker, H., Amslinger, S. (2013) Chemistry - A Euro J. 19(45):15384-95.

PubMed ID: 24105896 **Reactivity:** Mouse **Applications:** Western Blot

Reviews

Based on validation through cited publications.



StressMarq Biosciences

June 14, 2016: