abcam

ab13248

Anti-Heme Oxygenase 1 antibody [HO-1-1]

Anti-Heme Oxygenase 1 antibody [HO-1-1] (ab13248) is a mouse monoclonal antibody detecting Heme Oxygenase 1 in **Western Blot, Flow Cytometry (Intra), Flow Cytometry, IHC-P, ELISA**. Suitable for **Cow, Dog, Human, Mouse, Rat**.

- Over 320 publications
- Trusted since 2004

Key facts

Isotype	IgG1
Host species	Mouse
Storage buffer	Preservative: 0.09% Sodium azide Constituents: PBS, 50% Glycerol (glycerin, glycerine)
Form	Liquid
Clonality	Monoclonal
Immunogen	Synthetic Peptide within Human HMOX1 aa 1-50. The exact immunogen used to generate this antibody is proprietary information. Database link P09601
Clone number	HO-1-1
Purity	Tissue culture supernatant
Purification notes	Purified from TCS.

Reactivity data

IHC-P

Tested

Species	Human
Dilution info	-
Notes	Perform heat-mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.

Expected

Species	Rat, Dog, Cow, Mouse
Dilution info	Use at an assay dependent concentration.
Notes	-

WB

Tested

Species	Rat
Dilution info	-
Notes	-

Species	Human
Dilution info	-
Notes	-

Species	Dog
Dilution info	4 µg/mL
Notes	-

Species	Cow
Dilution info	-
Notes	-

Expected

Species	Mouse
Dilution info	Use at an assay dependent concentration.
Notes	-

sELISA

Tested

Species	Mouse
Dilution info	-
Notes	For sandwich ELISA, use this antibody as Capture at 5 µg/ml with Rabbit polyclonal to Heme Oxygenase 1 (ab13243) as Detection.

Expected

Species	Human, Rat, Dog, Cow
Dilution info	Use at an assay dependent concentration.
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
Notes	ab170190 - Mouse monoclonal IgG1, is suitable for use as an isotype control with this antibody.

Expected

Species	Rat, Dog, Cow, Mouse
Dilution info	Use at an assay dependent concentration.
Notes	-

Target data

See full target information HMOX1

Function	Heme oxygenase 1. Catalyzes the oxidative cleavage of heme at the alpha-methene bridge carbon, released as carbon monoxide (CO), to generate biliverdin IXalpha, while releasing the central heme iron chelate as ferrous iron (PubMed:11121422, PubMed:19556236, PubMed:7703255). Affords protection against programmed cell death and this cytoprotective effect relies on its ability to

	catabolize free heme and prevent it from sensitizing cells to undergo apoptosis (PubMed:20055707). Heme oxygenase 1. (Microbial infection) During SARS-COV-2 infection, promotes SARS-CoV-2 ORF3A-mediated autophagy but is unlikely to be required for ORF3A-mediated induction of reticulophagy. Heme oxygenase 1 soluble form. Catalyzes the oxidative cleavage of heme at the alpha-methene bridge carbon, released as carbon monoxide (CO), to generate biliverdin IXalpha, while releasing the central heme iron chelate as ferrous iron.

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Aliquoting information	Upon delivery aliquot
Storage information	Avoid freeze / thaw cycle

Notes

What is this antibody validated in?
Anti-Heme Oxygenase 1 antibody [HO-1-1] (ab13248) is a mouse monoclonal antibody and is validated for use in Western Blot (WB), Flow Cytometry (Intra), Flow Cytometry (Flow Cyt), Immunohistochemistry (IHC-P), ELISA in Cow, Dog, Human, Mouse, Rat samples.

What is the molecular weight of Heme Oxygenase 1?
Anti-Heme Oxygenase 1 [HO-1-1] (ab13248) specifically detects a band for Heme Oxygenase 1 (UniProt: P09601) at a molecular weight of 34.6kDa.

Trusted by the scientific community
Anti-Heme Oxygenase 1 [HO-1-1] (ab13248) was first used in a scientific publication in 2004 and has been cited over 320 times in peer-reviewed journals.

Reviewed by scientists
Anti-Heme Oxygenase 1 [HO-1-1] (ab13248) has over 15 independent reviews from customers.

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	Heme Oxygenase 1 also known as HO-1 or HMOX1 is an enzyme that plays an important mechanistic role in heme catabolism. It catalyzes the degradation of heme into biliverdin carbon monoxide and free iron. This process involves the

	cleavage of the heme ring. HO-1 has a molecular weight of approximately 32 kDa. It is widely expressed in numerous tissues but is especially abundant in the liver and spleen. Its expression is induced by heme and other stress stimuli such as heavy metals cytokines and reactive oxygen species.
Biological function summary	Heme Oxygenase 1 serves important protective functions in the body. It is not part of a larger complex but its products such as carbon monoxide and biliverdin have their own biological activities. Carbon monoxide produced by HO-1 has antiflammatory properties and can modulate apoptotic pathways. Biliverdin is reduced to bilirubin which acts as an antioxidant. The enzyme therefore directly influences cellular stress responses and maintains cellular homeostasis through these processes.
Pathways	Heme Oxygenase 1 is integrally involved in oxidative stress response and heme metabolism. It participates in the cellular response to oxidative damage by reducing oxidative stress and promoting cytoprotection. Through its heme degradation activity it is connected with the synthesis of biologically active molecules like bilirubin and carbon monoxide. Heme Oxygenase 1 activity is related to other proteins in oxidative stress pathways such as Nuclear Factor Erythroid 2-Related Factor 2 (Nrf2) which regulates its expression and globins which are sources of heme for HO-1 activity.
Associated diseases and disorders	Heme Oxygenase 1 has been linked to conditions like cardiovascular diseases and neurodegenerative disorders. Its expression can attenuate the severity of atherosclerosis where oxidative stress is an important factor. In neurodegenerative diseases HO-1’s antioxidant properties may provide neuroprotection by mitigating oxidative damage. The protein's interactions with inflammatory cytokines such as Interleukin-6 and tumor necrosis factor-alpha influence its activity in these disease contexts.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

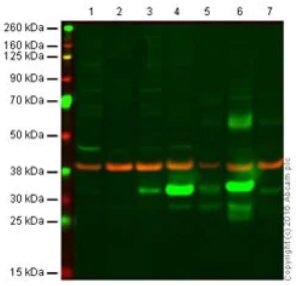
We do not recommend this combination. It is not covered by our product promise.

We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

Full details and terms and conditions can be found here:
Terms & Conditions.

7 product images



Western blot - Anti-Heme Oxygenase 1 antibody [HO-1-1] (ab13248)

Hek293 & HL60 presumed negative or very low expression.
Loading control GAPDH at 38kDa

This image was generated using the ascites version of the product.

All lanes:
Western blot - Anti-Heme Oxygenase 1 antibody [HO-1-1] (ab13248) at 1 µg/mL

Lane 1:
Hek293 at 10 µg

Lane 2:
HL60 at 10 µg

Lane 3:
HeLa at 10 µg

Lane 4:
A549 at 10 µg

Lane 5:
Hu spleen at 10 µg

Lane 6:
Ms spleen at 10 µg

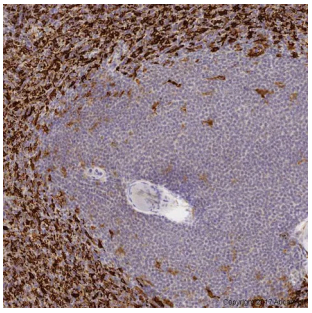
Lane 7:
Rt spleen at 10 µg

Secondary

All lanes:
IRDye® 800CW Goat anti Mouse

Predicted band size: 33 kDa

Observed band size: 32 kDa

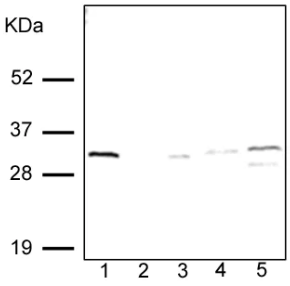


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Heme Oxygenase 1 antibody [HO-1-1] (ab13248)

IHC image of Hem Oxygensae 1 staining in a section of formalin fixed, paraffin embedded normal human spleen tissue section*, performed on a Leica Bond™ system using the standard protocol F. The section was pre-treated using heat mediated antigen retrieval with sodium citrate buffer (pH6, epitope retrieval solution 1) for 20 mins. The section was then incubated with ab13248, 5µg/ml, for 15 mins at room temperature and detected using an HRP conjugated compact polymer system. DAB was used as the chromogen. The section was then counterstained with haematoxylin and mounted with DPX.
This image was generated using the ascites version of the product.

For other IHC staining systems (automated and non-automated) customers should optimize variable parameters such as antigen retrieval conditions, primary antibody concentration and antibody incubation times.

*Tissue obtained from the Human Research Tissue Bank, supported by the NIHR Cambridge Biomedical Research Centre

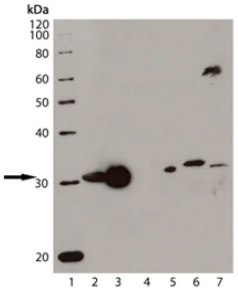


Western blot - Anti-Heme Oxygenase 1 antibody [HO-1-1] (ab13248)

The following proteins and lysates were electrophoresed; Lane 1 - Heme-Oxygenase-1 (Hsp32) Protein (50ng), lane 2 - Heme-Oxygenase-2 protein NSP-550 (100ng), lane 3 - MDBK Cell Lysate (20ug), lane 4 - Mouse liver microsome (20ug) and lane 5 - Dog liver microsome (20ug). ab13248 was applied at a concentration of 4ugml-1.
This image was generated using the ascites version of the product.

All lanes:
Western blot - Anti-Heme Oxygenase 1 antibody [HO-1-1] (ab13248)

Predicted band size: 33 kDa



Western blot - Anti-Heme Oxygenase 1 antibody [HO-1-1] (ab13248)

This image was generated using the ascites version of the product.
Lane 1:
MW marker

Lanes 2 - 7:
Western blot - Anti-Heme Oxygenase 1 antibody [HO-1-1] (ab13248)

Lane 2:
Recombinant Rat Heme Oxygenase 1

Lane 3:
Recombinant Human Heme Oxygenase 1

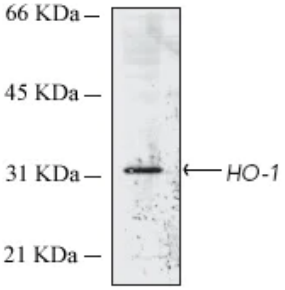
Lane 4:
Recombinant Human Heme Oxygenase 2

Lane 5:
MDBK cell lysate

Lane 6:
Dog liver microsome

Lane 7:
Mouse liver microsome

Predicted band size: 33 kDa

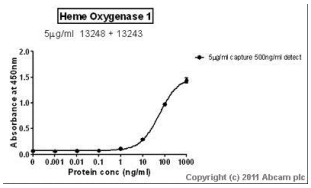


Western blot - Anti-Heme Oxygenase 1 antibody [HO-1-1] (ab13248)

This image was generated using the ascites version of the product.
All lanes:
Western blot - Anti-Heme Oxygenase 1 antibody [HO-1-1] (ab13248) at 1/250 dilution

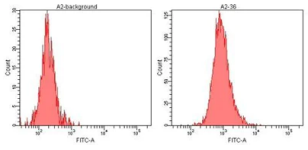
All lanes:
Human microsome lysate

Predicted band size: 33 kDa



Sandwich ELISA - Anti-Heme Oxygenase 1 antibody [HO-1-1] (ab13248)

Standard Curve for Heme Oxygenase 1 (Analyte: Heme Oxygenase 1 protein (Tagged) (ab85243)); dilution range 1pg/ml to 1µg/ml using Capture Antibody Mouse monoclonal [HO-1-1] to Heme Oxygenase 1 (ab13248) at 5µg/ml and Detector Antibody Rabbit polyclonal to Heme Oxygenase 1 (ab13243) at 0.5µg/ml.
This image was generated using the ascites version of the product.



Flow Cytometry (Intracellular) - Anti-Heme Oxygenase 1 antibody [HO-1-1] (ab13248)

ab13248 at 10µg/ml staining Heme Oxygenase 1 in human lung cancer A2 cells by flow cytometery. The left image repersents staining with isotype control antibody and the right image show staining with ab13248.
This image was generated using the ascites version of the product.