abcam

ab237268

Alexa Fluor® 647 Anti-Heme Oxygenase 1 antibody [EPR18161-128]

Recombinant | RabMAb

Key facts

Isotype	IgG
Host species	Rabbit
Conjugation	Alexa Fluor® 647
Excitation/Emission	Ex: 650nm, Em: 665nm
Storage buffer	pH: 7.4 Preservative: 0.02% Sodium azide Constituents: PBS, 30% Glycerol (glycerin, glycerine), 1% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	EPR18161-128
Purification technique	Affinity purification Protein A
Concentration	0.5 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

ICC/IF

Tested

Species	Human
Dilution info	1/100
Notes	This product gave a positive signal in HeLa fixed with 100% methanol (5 min).

Expected

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

Flow Cyt (Intra)

Tested

Species	Mouse
Dilution info	1/1250
Notes	-

Expected

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

IHC-P

Tested

Species	Human
Dilution info	1/100
Notes	-

Species	Mouse
Dilution info	1/100
Notes	-

Species	Rat
Dilution info	1/100
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 duration	1-2 weeks
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, Stable for 12 months at -20°C, Store in the dark

Notes

Patented technology
Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMAb® patents.

What are the advantages of a recombinant monoclonal antibody?
This product is a recombinant monoclonal antibody, which offers several advantages including:

- High batch-to-batch consistency and reproducibility
- Improved sensitivity and specificity
- Long-term security of supply
- Animal-free batch production

For more information, read more on recombinant antibodies.

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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

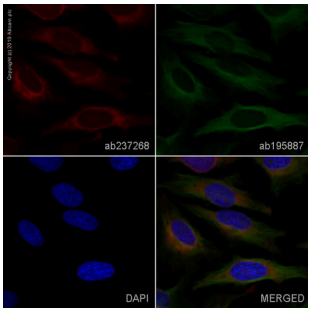
We do not recommend this combination. It is not covered by our product promise.

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.

6 product images

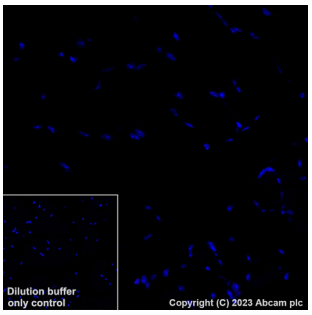


Immunocytochemistry/ Immunofluorescence - Alexa Fluor® 647 Anti-Heme Oxygenase 1 antibody [EPR18161-128] (ab237268)

Heme Oxygenase 1 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-Heme Oxygenase 1 antibody

ab237268 staining Heme Oxygenase 1 in HeLa cells. The cells were fixed with 100% methanol (5 min), permeabilized with 0.1% Triton X-100 for 5 minutes and then blocked with 1% BSA/10% normal goat serum/0.3M glycine in 0.1% PBS-Tween for 1h. The cells were then incubated overnight at +4°C with ab237268 at 1/100 dilution (shown in red) and ab195887, Mouse monoclonal to alpha Tubulin (Alexa Fluor® 488), at 1/250 dilution (shown in green). Nuclear DNA was labeled with DAPI (shown in blue).

Image was taken with a confocal microscope (Leica-Microsystems, TCS SP8).



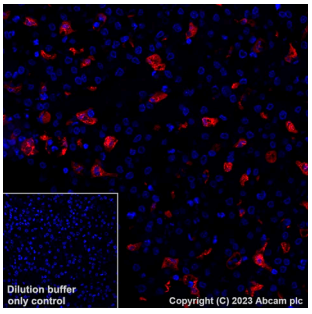
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Alexa Fluor® 647 Anti-Heme Oxygenase 1 antibody [EPR18161-128] (ab237268)

Heme Oxygenase 1 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining of Human skeletal muscle using rabbit Anti-Heme Oxygenase 1 antibody

Immunohistochemical analysis of paraffin-embedded Human skeletal muscle labeling Heme Oxygenase 1 with ab237268 at 1/100 dilution.

Negative control:: no staining on Human skeletal muscle.
The section was incubated with ab237268 for 60 mins at room temperature (shown in red). Nuclear DNA was labeled with DAPI (shown in blue). The section was then mounted using Fluoromount®.
The immunostaining was performed on a Leica Biosystems BOND RX instrument.
Image was taken with a confocal microscope (Leica-Microsystems, TCS SP8).

Heat mediated antigen retrieval was performed with Tris-EDTA buffer (pH 9.0, Epitope Retrieval Solution2) for 40 mins.



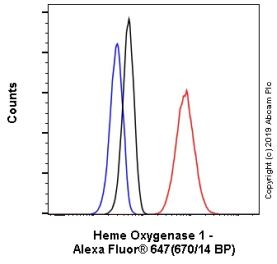
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Alexa Fluor® 647 Anti-Heme Oxygenase 1 antibody [EPR18161-128] (ab237268)

Heme Oxygenase 1 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining of Human liver using rabbit Anti-Heme Oxygenase 1 antibody

Immunohistochemical analysis of paraffin-embedded Human liver tissue labeling Heme Oxygenase 1 with ab237268 at 1/100 dilution.

Positive staining on macrophage in human liver.
The section was incubated with ab237268 for 60 mins at room temperature (shown in red). Nuclear DNA was labeled with DAPI (shown in blue). The section was then mounted using Fluoromount®.
The immunostaining was performed on a Leica Biosystems BOND RX instrument.
Image was taken with a confocal microscope (Leica-Microsystems, TCS SP8).

Heat mediated antigen retrieval was performed with Tris-EDTA buffer (pH 9.0, Epitope Retrieval Solution2) for 40 mins.

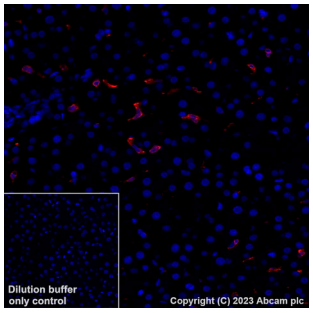


Flow Cytometry (Intracellular) - Alexa Fluor® 647 Anti-Heme Oxygenase 1 antibody [EPR18161-128] (ab237268)

Heme Oxygenase 1 Flow Cytometry (Intracellular) staining using rabbit Anti-Heme Oxygenase 1 antibody

Overlay histogram showing NIH/3T3 cells stained with ab237268 (red line). The cells were fixed with 80% methanol (5 min) and then permeabilized with 0.1% PBS-Triton X-100 for 15 min. The cells were then incubated in 1x PBS / 10% normal Goat serum to block non-specific protein-protein interactions followed by the antibody (ab237268) (1x 10^6 in 100µl at 0.4µg/ml (1/1250 dilution)) for 30 min at 22°C.
Isotype control antibody (black line) was Rabbit IgG (monoclonal) Alexa Fluor® 647 (ab199093) used at the same concentration and conditions as the primary antibody. Unlabeled sample (blue

line) was also used as a control. Acquisition of >5,000 events were collected using a 40 mW Red laser (640nm) and 670/14 bandpass filter.



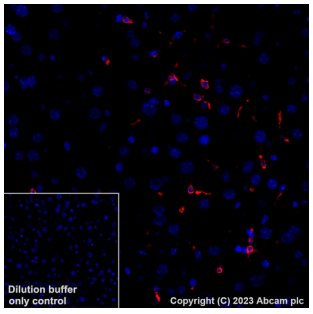
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Alexa Fluor® 647 Anti-Heme Oxygenase 1 antibody [EPR18161-128] (ab237268)

Heme Oxygenase 1 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining of Rat liver using rabbit Anti-Heme Oxygenase 1 antibody

Immunohistochemical analysis of paraffin-embedded rat liver tissue labeling Heme Oxygenase 1 with ab237268 at 1/100 dilution.

Positive staining on macrophage in rat liver.
The section was incubated with ab237268 for 60 mins at room temperature (shown in red). Nuclear DNA was labeled with DAPI (shown in blue). The section was then mounted using Fluoromount®.
The immunostaining was performed on a Leica Biosystems BOND RX instrument.
Image was taken with a confocal microscope (Leica-Microsystems, TCS SP8).

Heat mediated antigen retrieval was performed with Tris-EDTA buffer (pH 9.0, Epitope Retrieval Solution2) for 40 mins.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Alexa Fluor® 647 Anti-Heme Oxygenase 1 antibody [EPR18161-128] (ab237268)

Heme Oxygenase 1 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining of Mouse liver using rabbit Anti-Heme Oxygenase 1 antibody

Immunohistochemical analysis of paraffin-embedded mouse liver tissue labeling Heme Oxygenase 1 with ab237268 at 1/100 dilution.

Positive staining on macrophage in mouse liver.
The section was incubated with ab237268 for 60 mins at room temperature (shown in red). Nuclear DNA was labeled with DAPI (shown in blue). The section was then mounted using Fluoromount®.
The immunostaining was performed on a Leica Biosystems BOND RX instrument.
Image was taken with a confocal microscope (Leica-Microsystems, TCS SP8).

Heat mediated antigen retrieval was performed with Tris-EDTA buffer (pH 9.0, Epitope Retrieval Solution2) for 40 mins.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.