

# Heme Oxygenase 1 (F-4): sc-390991

## BACKGROUND

Heme oxygenases are microsomal enzymes that cleave heme to produce the antioxidant biliverdin, inorganic iron and carbon monoxide (CO). The activity of Heme Oxygenase 1 (HO-1), also designated HSP 32, is highly inducible in response to numerous stimuli, including heme, heavy metals, hormones and oxidative stress. Heme Oxygenase 2, in contrast, appears to be constitutively expressed in mammalian tissues. Heme Oxygenase 2 is involved in the production of carbon monoxide (CO) in brain, where CO is thought to act as a neurotransmitter. The CO signaling system closely parallels the signaling pathway involving nitric oxide, and regulation of the two systems is closely linked. Heme Oxygenase 3 is found in the spleen, liver, thymus, prostate, heart, kidney, brain and testis. A poor heme catalyst, Heme Oxygenase 3 has two heme regulatory motifs that may be involved in heme binding.

## REFERENCES

1. Maines, M.D. 1988. Heme Oxygenase: function, multiplicity, regulatory mechanisms, and clinical applications. *FASEB J.* 2: 2557-2568.
2. Rodgers, P.A., et al. 1990. Developmental biology of Heme Oxygenase. *Clin. Perinatol.* 17: 275-291.
3. Alam, J., et al. 1994. Isolation and characterization of the mouse Heme Oxygenase-1 gene. Distal 5' sequences are required for induction by heme or heavy metals. *J. Biol. Chem.* 269: 1001-1009.

## CHROMOSOMAL LOCATION

Genetic locus: HMOX1 (human) mapping to 22q12.3; Hmx1 (mouse) mapping to 8 C1.

## SOURCE

Heme Oxygenase 1 (F-4) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 245-283 near the C-terminus of Heme Oxygenase 1 of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Heme Oxygenase 1 (F-4) is available conjugated to agarose (sc-390991 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-390991 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-390991 PE), fluorescein (sc-390991 FITC), Alexa Fluor® 488 (sc-390991 AF488), Alexa Fluor® 546 (sc-390991 AF546), Alexa Fluor® 594 (sc-390991 AF594) or Alexa Fluor® 647 (sc-390991 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-390991 AF680) or Alexa Fluor® 790 (sc-390991 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-390991 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

## STORAGE

Store at 4° C, **\*\*DO NOT FREEZE\*\***. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## APPLICATIONS

Heme Oxygenase 1 (F-4) is recommended for detection of Heme Oxygenase 1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

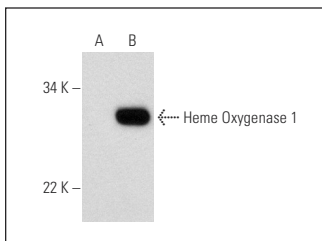
Heme Oxygenase 1 (F-4) is also recommended for detection of Heme Oxygenase 1 in additional species, including canine and bovine.

Suitable for use as control antibody for Heme Oxygenase 1 siRNA (h): sc-35554, Heme Oxygenase 1 siRNA (m): sc-35555, Heme Oxygenase 1 siRNA (r): sc-270124, Heme Oxygenase 1 shRNA Plasmid (h): sc-35554-SH, Heme Oxygenase 1 shRNA Plasmid (m): sc-35555-SH, Heme Oxygenase 1 shRNA Plasmid (r): sc-270124-SH, Heme Oxygenase 1 shRNA (h) Lentiviral Particles: sc-35554-V, Heme Oxygenase 1 shRNA (m) Lentiviral Particles: sc-35555-V and Heme Oxygenase 1 shRNA (r) Lentiviral Particles: sc-270124-V.

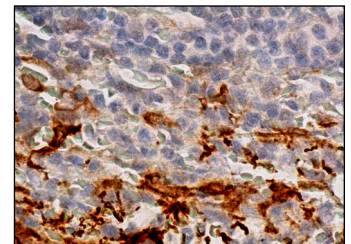
Molecular Weight of Heme Oxygenase 1: 32 kDa.

Positive Controls: Heme Oxygenase 1 (m): 293T Lysate: sc-120745.

## DATA



Heme Oxygenase 1 (F-4): sc-390991. Western blot analysis of Heme Oxygenase 1 expression in non-transfected: sc-117752 (A) and mouse Heme Oxygenase 1 transfected: sc-120745 (B) 293T whole cell lysates.



Heme Oxygenase 1 (F-4): sc-390991. Immunoperoxidase staining of formalin fixed, paraffin-embedded human spleen tissue showing cytoplasmic and membrane staining of cells in red pulp.

## SELECT PRODUCT CITATIONS

1. Lampiasi, N., et al. 2015. The molecular events behind ferulic acid mediated modulation of IL-6 expression in LPS-activated RAW 264.7 cells. *Immunobiology* 221: 486-493.
2. Chang, L.C., et al. 2018. Heme Oxygenase-1 mediates BAY 11-7085 induced ferroptosis. *Cancer Lett.* 416: 124-137.
3. Xie, X.L., et al. 2018. Lactulose attenuates METH-induced neurotoxicity by alleviating the impaired autophagy, stabilizing the perturbed antioxidant system and suppressing apoptosis in rat striatum. *Toxicol. Lett.* 289: 107-113.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.

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