

Heme Oxygenase 2 (B-3): sc-17786

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. and Stevenson, D.K. 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.
4. Maines, M.D. 1997. The heme oxygenase system; a regulator of second messenger gases. *Annu. Rev. Pharmacol. Toxicol.* 37: 517-554.

CHROMOSOMAL LOCATION

Genetic locus: HMOX2 (human) mapping to 16p13.3; Hmox2 (mouse) mapping to 16 A1.

SOURCE

Heme Oxygenase 2 (B-3) is a mouse monoclonal antibody raised against amino acids 239-311 of Heme Oxygenase 2 of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Heme Oxygenase 2 (B-3) is available conjugated to agarose (sc-17786 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-17786 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-17786 PE), fluorescein (sc-17786 FITC), Alexa Fluor® 488 (sc-17786 AF488), Alexa Fluor® 546 (sc-17786 AF546), Alexa Fluor® 594 (sc-17786 AF594) or Alexa Fluor® 647 (sc-17786 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-17786 AF680) or Alexa Fluor® 790 (sc-17786 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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STORAGE

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

APPLICATIONS

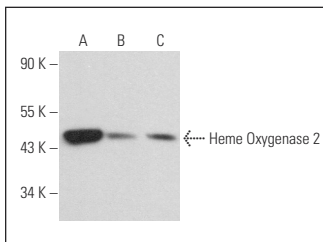
Heme Oxygenase 2 (B-3) is recommended for detection of Heme Oxygenase 2 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:500), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, 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).

Suitable for use as control antibody for Heme Oxygenase 2 siRNA (h): sc-35556, Heme Oxygenase 2 siRNA (m): sc-35557, Heme Oxygenase 2 siRNA (r): sc-270543, Heme Oxygenase 2 shRNA Plasmid (h): sc-35556-SH, Heme Oxygenase 2 shRNA Plasmid (m): sc-35557-SH, Heme Oxygenase 2 shRNA Plasmid (r): sc-270543-SH, Heme Oxygenase 2 shRNA (h) Lentiviral Particles: sc-35556-V, Heme Oxygenase 2 shRNA (m) Lentiviral Particles: sc-35557-V and Heme Oxygenase 2 shRNA (r) Lentiviral Particles: sc-270543-V.

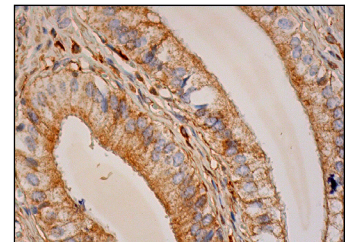
Molecular Weight of Heme Oxygenase 2: 36 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203, T98G cell lysate: sc-2294 or KNRK whole cell lysate: sc-2214.

DATA



Heme Oxygenase 2 (B-3): sc-17786. Western blot analysis of Heme Oxygenase 2 expression in K-562 (A), T98G (B) and KNRK (C) whole cell lysates.



Heme Oxygenase 2 (B-3): sc-17786. Immunoperoxidase staining of formalin fixed, paraffin-embedded human gall bladder tissue showing cytoplasmic and membrane staining of glandular cells.

SELECT PRODUCT CITATIONS

1. Philippidis, P., et al. 2004. Hemoglobin scavenger receptor CD163 mediates interleukin-10 release and Heme Oxygenase 1 synthesis: antiinflammatory monocyte-macrophage responses *in vitro*, in resolving skin blisters *in vivo*, and after cardiopulmonary bypass surgery. *Circ. Res.* 94: 119-126.
2. Dugmonits, K.N., et al. 2016. Elevated levels of macromolecular damage are correlated with increased Nitric oxide synthase expression in erythrocytes isolated from twin neonates. *Br. J. Haematol.* 174: 932-941.
3. Yu, H., et al. 2019. Protective roles of isoastilbin against Alzheimer's disease via Nrf2-mediated antioxidation and anti-apoptosis. *Int. J. Mol. Med.* 43: 1406-1416.
4. Alves de Souza, R.W., et al. 2021. Skeletal muscle Heme Oxygenase 1 activity regulates aerobic capacity. *Cell Rep.* 35: 109018.

RESEARCH USE

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