

Heme Oxygenase 2/3 (M-300): sc-33217

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.
4. Maines, M.D. 1997. The heme oxygenase system; a regulator of second messenger gases. *Annu. Rev. Pharmacol. Toxicol.* 37: 517-554.
5. McCoubrey, W.K., Jr., et al. 1997. Isolation and characterization of a cDNA from the rat brain that encodes hemoprotein Heme Oxygenase 3. *Eur. J. Biochem.* 247: 725-732.
6. Snyder, S.H., et al. 1998. Nitric oxide and carbon monoxide: parallel roles as neural messengers. *Brain Res. Brain Res. Rev.* 26: 167-175.

CHROMOSOMAL LOCATION

Genetic locus: HMOX2 (human) mapping to 16p13.3, HMOX1 (human) mapping to 22q12.3; Hmx2 (mouse) mapping to 16 A1, Hmx1 (mouse) mapping to 8 C1.

SOURCE

Heme Oxygenase 2/3 (M-300) is a rabbit polyclonal antibody raised against amino acids 1-300 mapping at the N-terminus of Heme Oxygenase 2 of mouse origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

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 2/3 (M-300) is recommended for detection of Heme Oxygenase 2 of mouse, rat and human origin, Heme Oxygenase 3 of mouse and rat origin, and, to a lesser extent, Heme Oxygenase 1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Heme Oxygenase 2/3 (M-300) is also recommended for detection of Heme Oxygenase 2 and, to a lesser extent, Heme Oxygenase 1 in additional species, including equine and canine.

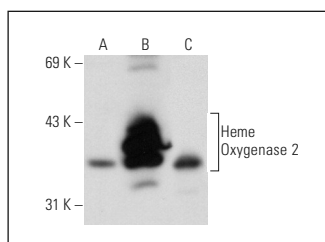
Molecular Weight of Heme Oxygenase 2/3: 36 kDa.

Positive Controls: Heme Oxygenase 2 (h): 293T Lysate: sc-177337, Heme Oxygenase 2 (m): 293T Lysate: sc-120746 or K-562 whole cell lysate: sc-2203.

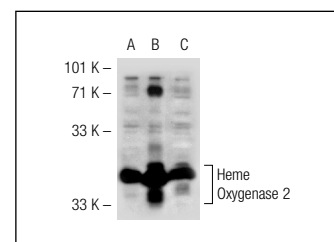
RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



Heme Oxygenase 2/3 (M-300): sc-33217. Western blot analysis of Heme Oxygenase 2 expression in non-transfected 293T: sc-117752 (A), human Heme Oxygenase 2 transfected 293T: sc-177337 (B) and K-562 (C) whole cell lysates.



Heme Oxygenase 2/3 (M-300): sc-33217. Western blot analysis of Heme Oxygenase 2 expression in non-transfected 293T: sc-117752 (A), mouse Heme Oxygenase 2 transfected 293T: sc-120746 (B) and HeLa (C) whole cell lysates.

RESEARCH USE

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

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Try **Heme Oxygenase 2/3 (A-3): sc-166342** or **Heme Oxygenase 2/3 (B-4): sc-166299**, our highly recommended monoclonal alternatives to Heme Oxygenase 2/3 (M-300).