

Heme Oxygenase 2/3 (B-4): sc-166299

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., Cai, J. and Smith, A. 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., Huang, T.J. and Maines, M.D. 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., Jaffrey, S.R. and Zakhary, R. 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; Hmx2 (mouse) mapping to 16 A1.

SOURCE

Heme Oxygenase 2/3 (B-4) is a mouse monoclonal 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 IgG₁ kappa light chain 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 (B-4) is recommended for detection of Heme Oxygenase 2 of mouse, rat and human origin, and Heme Oxygenase 3 of rat 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).

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

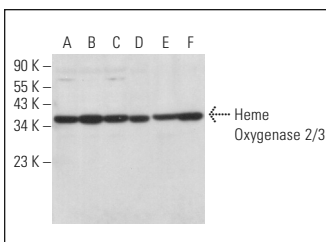
Molecular Weight of Heme Oxygenase 2/3: 36 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203, NIH/3T3 whole cell lysate: sc-2210 or HeLa whole cell lysate: sc-2200.

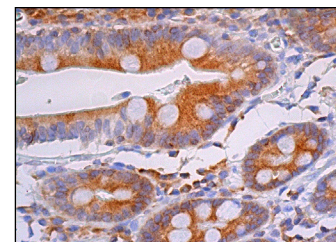
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 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 m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



Heme Oxygenase 2/3 (B-4): sc-166299. Western blot analysis of Heme Oxygenase 2/3 expression in K-562 (A), HeLa (B), HEL 92.1.7 (C), C3H/10T1/2 (D), NIH/3T3 (E) and PC-12 (F) whole cell lysates.



Heme Oxygenase 2/3 (B-4): sc-166299. Immunoperoxidase staining of formalin fixed, paraffin-embedded human duodenum tissue showing cytoplasmic staining of glandular cells.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.