

# Heme Oxygenase 2 (A-14): sc-31819

## 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. 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.
6. Motterlini, R., Gonzales, A., Foresti, R., Clark, J.E., Green, C.J. and Winslow, R.M. 1998. Heme Oxygenase 1-derived carbon monoxide contributes to the suppression of acute hypertensive responses *in vivo*. *Circ. Res.* 83: 568-577.

## CHROMOSOMAL LOCATION

Genetic locus: HMOX2 (human) mapping to 16p13.3; Hmox2 (mouse) mapping to 16 B1.

## SOURCE

Heme Oxygenase 2 (A-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of Heme Oxygenase 2 of human origin.

## PRODUCT

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

Blocking peptide available for competition studies, sc-31819 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## RESEARCH USE

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

## APPLICATIONS

Heme Oxygenase 2 (A-14) is recommended for detection of Heme Oxygenase 2 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).

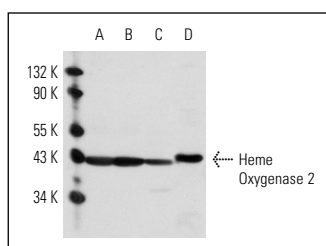
Heme Oxygenase 2 (A-14) is also recommended for detection of Heme Oxygenase 2 in additional species, including canine.

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: 36 kDa.

Positive Controls: mouse brain extract: sc-2253, RAW 264.7 whole cell lysate: sc-2211 or K-562 whole cell lysate: sc-2203.

## DATA



Heme Oxygenase 2 (A-14): sc-31819. Western blot analysis of Heme Oxygenase 2 expression in Y79 (A), SK-N-SH (B) and K-562 (C) whole cell lysates and mouse brain tissue extract (D).

## STORAGE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.



Try **Heme Oxygenase 2 (B-3): sc-17786** or **Heme Oxygenase 2/3 (A-3): sc-166342**, our highly recommended monoclonal alternatives to Heme Oxygenase 2 (A-14).