

Heme Oxygenase 1 (D-8): sc-136961

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.

CHROMOSOMAL LOCATION

Genetic locus: HMOX1 (human) mapping to 22q12.3.

SOURCE

Heme Oxygenase 1 (D-8) is a mouse monoclonal antibody raised against amino acids 184-288 of Heme Oxygenase 1 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.

APPLICATIONS

Heme Oxygenase 1 (D-8) is recommended for detection of Heme Oxygenase 1 of 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).

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

Molecular Weight of Heme Oxygenase 1: 32 kDa.

Positive Controls: SW-13 cell lysate: sc-24778, human spleen extract: sc-363779 or HeLa whole cell lysate: sc-2200.

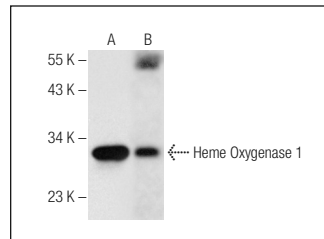
STORAGE

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

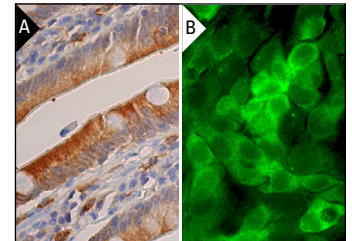
RESEARCH USE

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

DATA



Heme Oxygenase 1 (D-8): sc-136961. Western blot analysis of Heme Oxygenase 1 expression in human spleen tissue extract (A) and SW-13 whole cell lysate (B).



Heme Oxygenase 1 (D-8): sc-136961. Immunoperoxidase staining of formalin fixed, paraffin-embedded human lung tissue showing cytoplasmic staining of macrophages (A). Immunofluorescence staining of formalin-fixed Hep G2 cells showing cytoplasmic localization (B).

SELECT PRODUCT CITATIONS

1. Rezzani, R., et al. 2014. Attenuation of ultraviolet A-induced alterations in NIH3T3 dermal fibroblasts by melatonin. *Br. J. Dermatol.* 170: 382-391.
2. Zhang, X., et al. 2015. Curcumin protects renal tubular epithelial cells from high glucose-induced epithelial-to-mesenchymal transition through Nrf2-mediated upregulation of heme oxygenase-1. *Mol. Med. Rep.* 12: 1347-1355.
3. Aung, NY., et al. 2016. Specific neuropilins expression in alveolar macrophages among tissue-specific macrophages. *PLoS ONE* 11: e0147358.
4. Tsai, C.Y., et al. 2017. Nrf2 activation as a protective feedback to limit cell death in high glucose-exposed cardiomyocytes. *J. Cell. Biochem.* 118: 1659-1669.
5. Muhammad, T., et al. 2018. Melatonin rescue oxidative stress-mediated neuroinflammation/neurodegeneration and memory impairment in Scopolamine-induced amnesia mice model. *J. Neuroimmune Pharmacol.* 14: 278-294.
6. Muhammad, T., et al. 2019. Hesperetin, a citrus flavonoid, attenuates LPS-induced neuroinflammation, apoptosis and memory impairments by modulating TLR4/NFκB signaling. *Nutrients* 11 pii: E648.
7. Khan, A., et al. 2019. Caffeine modulates cadmium-induced oxidative stress, neuroinflammation, and cognitive impairments by regulating Nrf-2/HO-1 *in vivo* and *in vitro*. *J. Clin. Med.* 8 pii: E680.
8. Khan, M., et al. 2019. 17β-estradiol modulates SIRT1 and halts oxidative stress-mediated cognitive impairment in a male aging mouse model. *Cells* 8 pii: E928.



See **Heme Oxygenase 1 (A-3): sc-136960** for Heme Oxygenase 1 antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.