SANTA CRUZ BIOTECHNOLOGY, INC.

Heme Oxygenase 1 (23): sc-136256

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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, multiplicty, 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.

CHROMOSOMAL LOCATION

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

SOURCE

Heme Oxygenase 1 (23) is a mouse monoclonal antibody raised against amino acids 150-286 of Heme Oxygenase 1 of human origin.

PRODUCT

Each vial contains 50 µg IgG_1 in 0.5 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

Heme Oxygenase 1 (23) is recommended for detection of Heme Oxygenase 1 of 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)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

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: HeLa whole cell lysate: sc-2200 or SW-13 cell lysate: sc-24778.

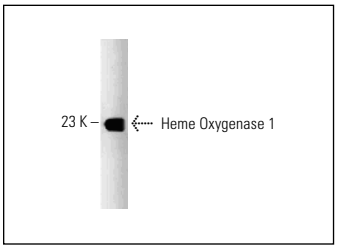
RESEARCH USE

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

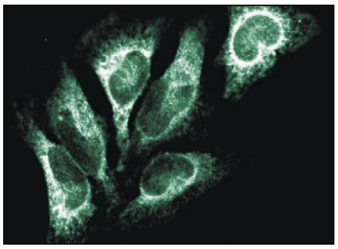
STORAGE

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

DATA



Heme Oxygenase 1 (23): sc-136256. Western blot analysis of Heme Oxygenase 1 expression in SW-13 whole cell lysate.



Heme Oxygenase 1 (23): sc-136256. Immunofluorescence staining of HeLa cells showing cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Amadio, M., et al. 2015. Involvement of ELAV RNA-binding proteins in the post-transcriptional regulation of HO-1. Front. Cell. Neurosci. 8: 459.
2. Zhang, Y., et al. 2017. Simvastatin attenuates renal ischemia/reperfusion injury from oxidative stress via targeting Nrf2/HO-1 pathway. Exp. Ther. Med. 14: 4460-4466.
3. Xu, J., et al. 2018. Protective effects of oxymatrine against lipopolysaccharide/D-galactosamine-induced acute liver failure through oxidative damage, via activation of Nrf2/HO-1 and modulation of inflammatory TLR4-signaling pathways. Mol. Med. Rep. 17: 1907-1912.
4. Ding, X., et al. 2019. Ellagic acid ameliorates oxidative stress and Insulin resistance in high glucose-treated Hep G2 cells via miR-223/keap1-Nrf2 pathway. Biomed. Pharmacother. 110: 85-94.
5. Alam, M.B., et al. 2020. Cerevisterol alleviates inflammation via suppression of MAPK/NFκB/AP-1 and activation of the Nrf2/HO-1 signaling cascade. Biomolecules 10: 199.
6. Alam, M.B., et al. 2020. Phytochemical characterization of *Dillenia indica L.* bark by paper spray Ionization-mass spectrometry and evaluation of its antioxidant potential against t-BHP-induced oxidative stress in RAW 264.7 cells. Antioxidants 9: 1099.
7. Ding, X., et al. 2022. Bisdemethoxycurcumin attenuated renal injury via activation of Keap1/Nrf2 pathway in high-fat diet-fed mice. Int. J. Mol. Sci. 23: 7395.
8. Huovinen, M., et al. 2022. The effect of ethanol and nicotine on ER stress in human placental villous explants. Curr. Res. Toxicol. 3: 100081.

CONJUGATES

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.