

Product Information

sigma-aldrich.com

3050 Spruce Street, Saint Louis, MO 63103 USA
Tel: (800) 521-8956 (314) 771-5765 Fax: (800) 325-5052 (314) 771-5757
email: techservice@sial.com sigma-aldrich.com

Anti-Heme Oxygenase-1

produced in rabbit, IgG fraction of antiserum

Catalog Number **H4535**

Synonyms; Anti-HO-1; Anti-HSP32

Product Description

Anti-Heme Oxygenase-1 is produced in rabbit using as immunogen a synthetic peptide corresponding to amino acids 2-23 of rat heme oxygenase-1 conjugated to KLH. This amino acid sequence contains only two mismatches with the reported human and rat sequences.

Anti-Heme Oxygenase-1 recognizes recombinant heme oxygenase-1 by immunoblotting (32 kDa). By immunohistochemistry (4% paraformaldehyde-fixed, frozen tissue), the antibody stains HO-1 in mouse brain tissue. It reacts with both mouse and rat tissues.

Heme oxygenase catalyzes the rate-limiting step in the oxidation of heme to biliverdin, an antioxidant; iron, a gene regulator; and carbon monoxide, a heme ligand.¹ Carbon monoxide may act as a biological second messenger which plays important roles in neuronal signaling and modulation of vascular tone.^{2,3} In addition, it has been proposed that carbon monoxide may act as a retrograde messenger during long term potentiation (LTP) as inhibitors of heme oxygenase block LTP.⁴ Carbon monoxide may also be involved in pathological conditions such as ischemia, endotoxic shock and excitotoxicity. Two forms of heme oxygenase have been identified, heme oxygenase-1 (also known as HSP32) and heme oxygenase-2. Heme oxygenase-1 (HO-1) and heme oxygenase-2 (HO-2) proteins are expressed from different gene products and have little in common regarding structure, regulation or tissue distribution.¹ HO-1 responds to a variety of stimuli known to induce oxidative stress, including heavy metals, endotoxins, inflammatory cytokines, prostaglandins and disease states. While the 32 kDa HO-1 protein is induced by stress⁵, HO-2 (34 kDa) is constitutively expressed.

Reagents

Supplied at 0.1 mg/mL in 0.05 M sodium phosphate buffer containing 0.2% gelatin and $\leq 0.1\%$ sodium azide.

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Storage/Stability

Store product at 2-8 °C. Do not freeze. If slight turbidity develops upon prolonged storage, clarify solution by centrifugation.

Product Profile

Immunoblotting: a recommended concentration is 0.5-1 $\mu\text{g/ml}$ using 10 ng recombinant protein with chemiluminescent detection.

Immunohistochemistry: a recommended concentration is 0.5 $\mu\text{g/ml}$ using floating mouse brain sections fixed in 4% paraformaldehyde with DAB detection. Staining is completely abolished by preincubating the purified antibody with immunizing peptide at 10^{-6} M.

Note: In order to obtain best results and assay sensitivities to different techniques and preparations, we recommend determining optimal working dilutions by titration.

References

1. Maines, M. S., *Annu. Rev. Pharmacol. Toxicol.*, **37**, 517-554 (1997).
2. Marks, G. S., et al., *Trends Pharm. Sci.*, **12**, 185-188 (1991).
3. Lowenstein, C. J. and Snyder, S. H., *Cell*, **70**, 705-707 (1992).
4. Stevens, C. F. and Wang, Y., *Nature*, **364**, 147-149 (1993).
5. Ewing, J. F., et al., *J. Neurochem.*, **58**, 1140-1148 (1992).

KAA,PHC 02/08-1

Sigma brand products are sold through Sigma-Aldrich, Inc.
Sigma-Aldrich, Inc. warrants that its products conform to the information contained in this and other Sigma-Aldrich publications.
Purchaser must determine the suitability of the product(s) for their particular use. Additional terms and conditions may apply.
Please see reverse side of the invoice or packing slip.

SIGMA-ALDRICH™