HO-1 (Hsp32) Polyclonal Antibody

Product Specifications

Catalog Number:	SPA-895
Source:	Rabbit
Species Reactivity:	Mouse, rat, human, and canine Other species not tested.
Applications: *The optimal dilution for a specific application must be determined by the investigator*	**WB**[4]**:** 1:1,000 (ECL) **IHC:** Yes Other applications not tested.
Predicted m.w:	~32 kDa
Concentration:	See product label
Purification:	Protein A Affinity
Format:	PBS, pH 7.2, 0.09% azide, 50% glycerol
Storage: *Shipping conditions may differ from the recommended storage temperature*	Store at -20°C
Immunogen:	Recombinant rat HO-1 (Hsp32) lacking the membrane spanning region

Related Products:

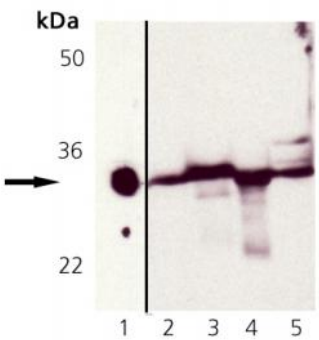
SPP-730	HO-1 (Hsp32) Recombinant Protein
OSA-110	HO-1 (Hsp32) Monoclonal Antibody (HO-1-1)
OSA-111	HO-1 (Hsp32) Monoclonal Antibody (HO-1-2)
OSA-111-488	HO-1 Monoclonal Antibody (HO-1-2), DyLight™ 488 Conjugate
OSA-150	HO-1 (Hsp32) Polyclonal Antibody
SPA-894	HO-1 (Hsp32) Polyclonal Antibody
EKS-800	HO-1 (Human) ELISA Kit

Background:

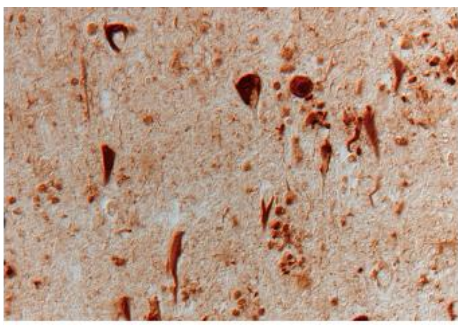
Inducible heme oxygenase (HO) catalyzes the NADPH, O_2 and cytochrome P450 reductase dependent oxidation of heme to carbon monoxide, iron and biliverdin (immediately reduced to bilirubin). These products of the HO reaction render important physiological effects. Carbon monoxide becomes a potent vasodilator, biliverdin and its product bilirubin function as potent antioxidants, and 'free' iron increases oxidative stress and regulates the expression of many mRNAs (e.g., DCT-1, ferritin and transferrin receptor) by affecting the conformation of iron regulatory protein-1 (IRP-1) and its binding to iron regulatory elements (IREs) in the 5'- or 3'-UTRs of the mRNAs. To date, researchers have identified heme oxygenase isoforms HO-1, HO-2 and HO-3. The mRNA and activity of HO-1/Hsp32, a ubiquitous major heat shock/stress response protein, can be increased several-fold by heme, other metalloporphyrins, transition metals and stimuli that induce cellular stress. The 5'-untranslated region (UTR) of HO-1 contains several consensus regulatory elements which include sites for activator protein 1 (AP-1), metal responsive element (MRE), oncogene c-myc/max heterodimer binding site (Myc/Max), antioxidant response element (ARE) and GC box binding (Sp1)[1]. HO-1 expression increases in benign prostatic hyperplasia (BPH) and malignant prostate tissue, suggesting a role for this stress protein in the pathogenesis of BPH and prostate cancer[2]. Recent data demonstrates the ability of Peroxynitrite (ONOO-) to modulate HO-1 expression, suggesting that the heme oxygenase pathway contributes to protection against the cytotoxic action of ONOO-, a potent oxidizing agent generated by the interaction of nitric oxide (NO) and the superoxide anion. ONOO- rapidly decomposes to a highly reactive hydroxyl radical and nitrogen dioxide, both of which cause oxidative damage[3].

References:

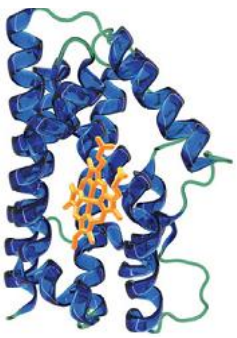
1. Elbirt, K.K., *et al* (1999) Proc Assoc Am Physicians. **111**, 438-447.
2. Maines, M.D., *et al* (1996) Urology **47**, 727-733.
3. Foresti, R., *et al* (1999) Biochem J. **339**, 729-736.
4. Ishizaka, N., *et al* (2002) Hypertension **39**, 122-128.
5. Smith, M.A., *et al*. (1994) Am J Pathol. **145**, 42-47.
6. Lad, L., *et al*. (2003) J Biol Chem. **278**, 7834-7843.



Western Blot Analysis of HO-1 Polyclonal Antibody: Lane 1: SPP-730, Lane 2: Human Liver Microsomes, Lane 3: Rat Liver Microsomes, Lane 4: Mouse Liver Microsomes, Lane 5: Canine Liver Microsomes.



Alzheimer diseased section stained with HO-1 (Hsp32) Polyclonal Antibody[5]



Crystal structure of human HO-1 (Hsp32) in complex with its substrate heme[6]

Assay Designs makes every effort to provide a consistent source of high quality polyclonal antibodies. However, due to variations inherent in this technology, investigators are urged to purchase sufficient quantities of a specific lot number if an identical antibody is required throughout a study.