

## HO-1 (Hsp32) Polyclonal Antibody

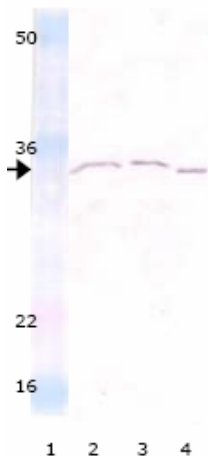
Product Specifications	
<b>Catalog Number:</b>	SPA-894
<b>Source:</b>	Rabbit
<b>Species Reactivity:</b>	Human, mouse, rat, canine, guinea pig, hamster, monkey, rabbit, and sheep
<b>Applications:</b>	<b>WB:</b> 1:1000 (Colorimetric) <b>WB:</b> 1:1000 (ECL) Other applications not tested. <i>The optimal dilution for a specific application must be determined by the investigator</i>
<b>Predicted M.W.:</b>	~ 32 kDa
<b>Concentration:</b>	See product label
<b>Purification:</b>	Protein A Affinity
<b>Format:</b>	PBS, pH 7.2, 0.09% azide, 50% glycerol
<b>Storage:</b>	Store at -20 °C <i>Shipping conditions may differ from the recommended storage temperature</i>
<b>Immunogen:</b>	Recombinant human HO-1 (Hsp32) protein
<b>Related Products:</b>	
SPP-732	HO-1 (Hsp32) Recombinant Protein
SAB-301	Goat anti-Rabbit IgG Polyclonal Antibody, AP Conjugate
<b>NEW!</b> LYT-HM100	Human Liver Microsome Extract
<b>NEW!</b> LYT-MM100	Mouse Liver Microsome Extract
<b>NEW!</b> LYT-RM100	Rat Liver Microsome Extract
OSA-110	HO-1 (Hsp32) Monoclonal Antibody (HO-1-1)
EKS-800	HO-1 (Human) ELISA Kit
EKS-810A	HO-1 (Rat) ELISA Kit

### Background:

Heme oxygenase-1 (HO-1) or Hsp32 is the inducible isoform of heme oxygenase which catalyzes the NADPH, O<sub>2</sub> and cytochrome P450 reductase dependent oxidation of heme to carbon monoxide, iron and biliverdin that is immediately reduced to bilirubin. These products of the HO reaction have important physiological effects: carbon monoxide is a potent vasodilator; biliverdin and its product bilirubin are potent antioxidants; "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 (IRP)-1 and its binding to iron regulatory elements (IREs) in the 5'- or 3'-UTRs of the mRNAs. To date, three heme oxygenase isoforms HO-1, HO-2 and HO-3 have been identified. HO-1, also known as Hsp32, a major heat shock/stress response protein, is ubiquitous and its mRNA as well as its activity 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 has 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 has been shown to increase 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). There is data which indicates the ability of peroxynitrite (ONOO-) to modulate the expression of HO-1 and suggest that the heme oxygenase pathway contributes to protection against the cytotoxic action of ONOO- which is 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 Phys* **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.



**Western blot analysis** Lane 1: MWM, Lane 2: Human liver microsomes, Lane 3: Mouse liver microsomes, Lane 4: Rat liver microsomes, probed with HO-1 (Hsp32) Polyclonal Antibody at 1:1000

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5777 Hines Drive • Ann Arbor, MI • 48108 | Tel: 800-833-8651 or 800-668-6113 | Fax: 734-668-2793  
www.assaydesigns.com | orders@assaydesigns.com | technical@assaydesigns.com

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