

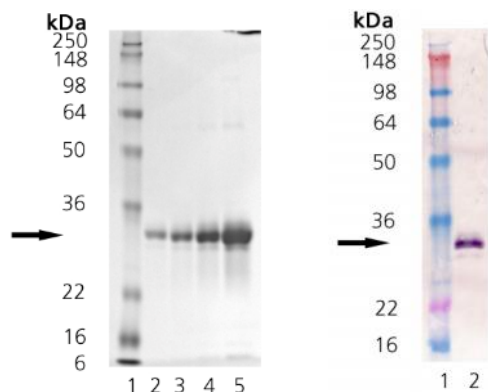
## HO-1 (Hsp32) Recombinant Human Protein

### Product Specifications

<b>Catalog Number:</b>	SPP-732
<b>Product Description:</b>	Recombinant Human HO-1 (Hsp32) expressed in <i>E. coli</i>
<b>Format:</b>	Stored in 1x Dulbecco's Phosphate Buffer Saline (DPBS)
<b>Application:</b>	WB Control: 100 ng of protein recommended <i>The optimal dilution for a specific application must be determined by the investigator</i>
<b>Purity:</b>	>90% pure as determined by SDS-PAGE and Western blot analyses
<b>Molecular Weight:</b>	~ 32 kDa observed
<b>Concentration:</b>	See product label
<b>Storage:</b>	Store at -70°C <i>Shipping conditions may differ from the recommended storage temperature</i>
<b>Related Products:</b>	
<b>NEW!</b>	LYT-HM100 Human Liver Microsome Extract
	OSA-110 HO-1 (Hsp32) Monoclonal Antibody (HO-1-1)
	EKS-800 HO-1 (Human) ELISA Kit
	OSA-150 HO-1 (Hsp32) Polyclonal Antibody
	SPA-896 HO-1 (Hsp32) Polyclonal Antibody

### 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 or 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)<sup>1</sup>. HO-1 expression has been shown to increase in benign poststatic hyperplasia (BPH) and malignant prostate tissue suggesting a role for this stress protein in the pathogenesis of BPH and prostate cancer<sup>2</sup>. There is recent data which indicates the ability of peroxynitrite (ONOO<sup>-</sup>) to modulate the expression of HO-1 and suggest that the heme oxygenase pathway contributes to protection against the cytotoxic action of ONOO<sup>-</sup> which is a potent oxidizing agent generated by the interaction of nitric oxide (NO) and the superoxide anion. ONOO<sup>-</sup> rapidly decomposes to a highly reactive hydroxyl radical and nitrogen dioxide, both of which cause oxidative damage<sup>3</sup>.



**SDS-PAGE Analysis:** Lane 1: MWM, Lane 2: 0.5 µg; Lane 3: 1 µg; Lane 4: 2 µg; Lane 5: 5 µg of SPP-732 detected by Imperial stain

**Western Blot Analysis:** Lane 1: MWM, Lane 2: 100 ng SPP-732; probed with OSA-110.

#### References:

1. Elbirt, K.K. *et al.* (1999) Proc Assoc Am Physicians **111**, 438-447.
2. Maines, M.D. and Abrahamsson, P.A. (1996) Urology **47**, 727-733.
3. Foresti, R., *et al.* (1999) Biochem J. **339**, 729-736.

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