ALPHA DIAGNOSTIC INTERNATIONAL

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Product Specification Sheet

**Heme Oxygenase-1 (HO-1)**

**Cat.** # HO15-R-25 Recombinant Rat HO-1 Protein **SIZE**: 25 ug

**FORM**: Soln Lyophilized

**Heme oxygenase** is the rate-limiting microsomal enzyme in the heme degradative pathway. Heme oxygenase catalyzes the NADPH, O2 and cytochrome P450 reductase dependent oxidation of heme to form equimolar biliverdin, carbon monoxide, a putative neurotransmitter, and iron. Biliverdin is subsequently converted to bilirubin by biliverdin reductase. 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, 3 forms of **heme oxygenases (HO1-3)** have been identified. **HO-1 or Hsp-32** (EC 1.14.99.3; mouse/rat 289 aa; human 288 aa, chromosome 22; ~88% homology between the species) is an inducible enzyme. Ho-1 is expressed in most tissues with highest levels in spleen. HO-1 gene expression is inducible by heme, suggesting an important role of HO-1 in heme metabolism. Many other agents or conditions related to oxidant damage such as longer wavelength UV radiation, hyperoxia, hypoxia, hydrogen peroxide, glutathione depletion, endotoxin, and, more recently, nitric oxide (NO) have also been found to stimulate HO-1 expression. HO-1 expression has been shown to increase in benign prostatic hyperplasia (BPH) and malignant prostate tissue.

## Source of Antigen

Rat HO-1 (1-261 aa without TM domain) was expressed in E. colli and purified >95%. It is supplied in PBS, 0.05 EDTA, 10% Glycerol. See protein concn on the vial. Store at –20oC in suitable aliquots. Avoid repeated thawing or heating.

**Storage**

**Short-term**: unopened, undiluted vials for less than a week at 4oC.

**Long-term**: at –20C or below in suitable aliquots after reconstitution. Do not freeze and thaw and store working, diluted solutions.

**Stability**: 6-12 months at –20oC or below.
**Shipping**: 4oC for solutions and room temp for powder.

## Recommended Usage

**Western Blotting** HO-1 ~31-33 kDa.

**ELISA** (1:100K; using 50-100 ng control protein/well).

**General References**: (1). Muller Rm et al (1987) JBC 262, 6795-6802; Shibahara S et al (1985) PNAS 82, 7865-7869; Kageyama H et al (1988) Cancer Res. 48, 4795-4798; Alam J et al (1994) JBC 269, 1001-1009; Keyse SM et al (1989) PNAS 86, 99-103; Yoshida T et al (1988) Eur. J. Biochem. 171, 457-461; 171, 457

*This product is for in vitro research use only.

**Some New Antibodies from ADI…**

**Anti-HO-1 and HO-2**

**Recombinant purified HO-1 and HO-2 (rat and human)**

IRP1-2, HFE, Frataxin, Hepcidin, Hephaestin, NRAMPs, USF2, Ferritin, Light and heavy chains, ferritin and B2-M ELISA, Tfr1-2, ceruloplasmin, B2-Micro globulin,



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