HO-1 Protein

Rat Recombinant HO-1 Partial Protein
Catalog No. SPR-315

StressMarq Biosciences INC.
Discovery through partnership | Excellence through quality

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Product Name

HO-1 Protein

Description

Rat Recombinant HO-1 Partial Protein

Applications

WB, SDS-PAGE

Concentration

Lot/batch specific. See included datasheet.

Conjugates

His tag

Nature

Recombinant

Species

Rat

Expression System

E. coli

Amino Acid Sequence

MERPQLDSMSQDLSEALKEATKEVHIRAENSEFMRNFQKGQVSREGFKLVMASLYHIYTALEEEIERNKQNPVYAPLYFPE
ELHRRAALEQDMAFWYGPHWQEAIPYTPATQHYVKRLHEVGGTHPELLVAHAYTRYLGDLSGGQVLKKIAQKAMALPS
SGEGLAFFTFPSIDNPTKFKQLYRARMNTLEMTPEVKHRVTEEAKTAFLLNIELFEELQALLTEEHKDQSPSQTEFLRQRPA
SLVQDTTSAETPRGKSQIST

Purity

>90%

Protein Length

Partial

Field Of Use

Not for use in humans. Not for use in diagnostics or therapeutics. For in vitro research use only.

Properties

Storage Buffer

50mM Tris/HCl pH7.5, 5mM Bme, 0.15NaCl, 10% glycerol

Storage Temperature

-20ºC

Shipping Temperature

Blue Ice or 4ºC

Purification

Affinity Purified

Specificity

~32 kDa

Cite This Product

Rat Recombinant HO-1 Protein (StressMarq Biosciences Inc., Victoria BC CANADA, Catalog # SPR-315)

Certificate Of Analysis

This product has been certified >90% pure using SDSPAGE analysis.

Biological Description

Alternative Names

Heme oxygenase 1 Protein, Hemox Protein, HMOX1 Protein, HO1 Protein, HO 1 Protein, HSP32 Protein

Research Areas

Cancer, Oxidative Stress

Cellular Localization

Endoplasmic Reticulum, Microsome

Accession Number

NP_036712.1

Gene ID

24451

Swiss Prot

P06762

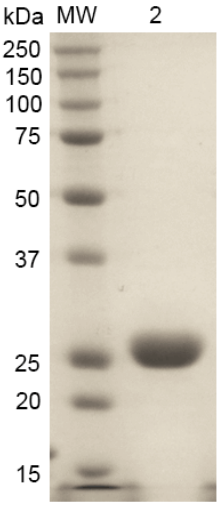
Scientific Background

Heme-oxygenase is a ubiquitous enzyme that catalyzes the initial and rate-limiting steps in heme catabolism yielding equimolar amounts of biliverdin, iron and carbon monoxide. Biliverdin is subsequently converted to bilirubin and the free iron is sequestered to ferritin (1). These products have important physiological effects as carbon monoxide is a potent vasodilator; biliverdin and bilirubin are potent antioxidants; and the free iron increases oxidative stress and regulates the expression of many mRNAs (2).There are three isoforms of heme-oxygenase, HO-1, HO-2 and HO-3; however HO-1 and HO-2 are the major isoforms as they both have been identified in mammals (3). HO-1, also known as heat shock protein 32, is an inducible isoform activated by most oxidative stress inducers, cytokines, inflammatory agents and heat shock. HO-2 is a constitutive isoform which is expressed under homeostatic conditions. HO-1 is also considered to be a cytoprotective factor in that free heme is highly reactive and cytotoxic, and secondly, carbon monoxide is a mediator inhibiting the inflammatory process and bilirubin is a scavenger for reactive oxygen, both of which are the end products of heme catalyzation (4). It has also been shown that HO-1 deficiency may cause reduced stress defense, a pro-inflammatory tendency (5), susceptibility to atherosclerotic lesion formation (6), endothelial cell injury, and growth retardation (7). Up-regulation of HO-1 is therefore said to be one of the major defense mechanisms of oxidative stress (4).

References

1. Froh M. et al. (2007) World J. Gastroentereol 13(25): 3478-86.
2. Elbirt K.K. and Bonkovsky H.L. (1999) Proc Assoc Am Physicians 111(5): 348-47.
3. Maines M.D., Trakshel G.M., and Kutty R.K. (1986) J Biol Chem 261: 411–419.
4. Brydun A., et al. (2007) Hypertens Res 30(4): 341-8.
5. Poss K.D. and Tonegawa S. (1997). Proc Natl Acad Sci U S A. 94: 10925–10930.
6. Yet S.F., et al. (2003) FASEB J. 17: 1759–1761.
7. Yachie A., et al. (1999) J Clin Invest. 103: 129–135.

Product Images



SDS-PAGE of ~32 kDa rat HO-1 protein (SPR-315).