

## Hemin

Catalog number: F-H010

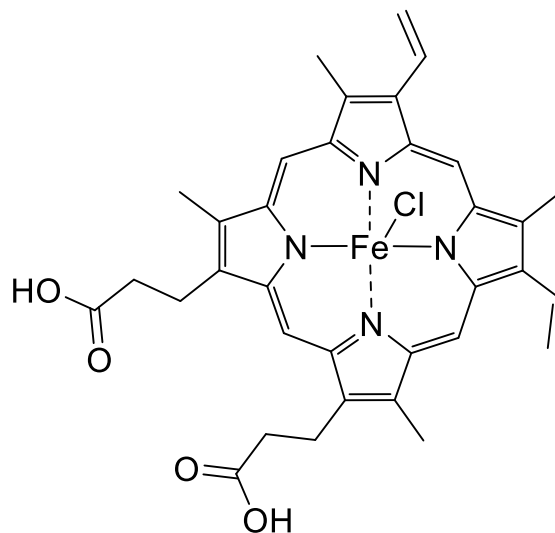
Molecular Formula:  $C_{34}H_{32}ClFeN_4O_4$

MW: 651.96

CAS: 16009-13-5

Source: porcine blood

Solubility: DMSO (1 mg/mL), 1.4M NaOH (25 mg/mL)



**Storage and Handling:** Hemin is stable for at least one year when stored as a solid, protected from moisture, at  $-20^{\circ}\text{C}$ . Protect from light.

**Background:** Hemin induces the activity of the enzyme heme-oxygenase<sup>1</sup>. Heme oxygenase catalyzes the conversion of heme to biliverdin, CO and  $\text{Fe}^{+3}$ . The induction of heme oxygenase activity has been associated with reduced free radical formation<sup>2</sup> and inflammation<sup>3</sup>, vascular repair<sup>3</sup> and implicated in tumor growth and metastasis<sup>4</sup>. Hemin has been shown to be effective at  $75\ \mu\text{mol/kg}^5$  in mice or  $5\ \mu\text{M}^6$  for cells in culture.

**References:** 1) Shibahara, S.; Yoshida, T.; Kikuchi, G. Induction of heme oxygenase by hemin in cultured pig alveolar macrophages. *Arch Biochem Biophys* 1978, 188, 243-50. 2) Abraham, N. G.; Kappas, A. Heme oxygenase and the cardiovascular-renal system. *Free Radic Biol Med* 2005, 39, 1-25. 3) Kim, D. H.; Burgess, A. P.; Li, M.; Tsenovoy, P. L.; Addabbo, F.; McClung, J. A.; Puri, N.; Abraham, N. G. Heme oxygenase-mediated increases in adiponectin decrease fat content and inflammatory cytokines, TNF and IL-6, in Zucker rats and reduce adipogenesis in human mesenchymal stem cells. *J Pharmacol Exp Ther* 2008. 4) Jozkowicz, A.; Was, H.; Dulak, J. Heme oxygenase-1 in tumors: is it a false friend? *Antioxid Redox Signal* 2007, 9, 2099-117. 5) Xia, Z. W.; Zhong, W. W.; Xu, L. Q.; Sun, J. L.; Shen, Q. X.; Wang, J. G.; Shao, J.; Li, Y. Z.; Yu, S. C. Heme oxygenase-1-mediated  $\text{CD4}^+\text{CD25}^{\text{high}}$  regulatory T cells suppress allergic airway inflammation. *J Immunol* 2006, 177, 5936-45. 6) Basireddy, M.; Lindsay, J. T.; Agarwal, A.; Balkovetz, D. F. Epithelial cell polarity and hypoxia influence heme oxygenase-1 expression by heme in renal epithelial cells. *Am J Physiol Renal Physiol* 2006, 291, F790-5.

**Hazardous Properties and Cautions:** The toxicological and pharmacological properties of this compound are not fully known. For further information see the MSDS on request. This product is manufactured and shipped only in small quantities, intended for research and development in a laboratory utilizing prudent procedures for handling chemicals of unknown toxicity, under the supervision of persons technically qualified to evaluate potential risks and authorized to enforce appropriate health and safety measures. As with all research chemicals, precautions should be taken to avoid unnecessary exposures or risks.

**Warranty and Disclaimer:** Echelon warrants the product conforms to the specifications stated herein. In the event of nonconformity, Echelon will replace products or refund purchase price, at its sole option, and Echelon shall not be responsible for any other loss or damage, whether known or foreseeable to Echelon. No other warranties apply, express or implied, including but not limited to warranty of fitness for any purpose or implied warranty of merchantability. Purchaser is solely responsible for all consequences of its use of the product and Echelon assumes no responsibility therefore, including success of purchaser's research and development, or health or safety of any uses of the product.

