

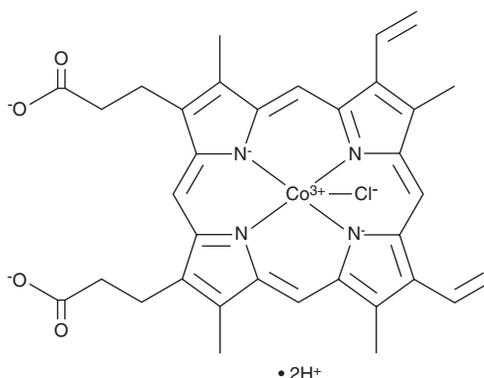
PRODUCT INFORMATION



Cobaltic(III) Protoporphyrin IX Chloride

Item No. 33794

CAS Registry No.: 102601-60-5
Formal Name: (SP-5-13)-chloro[7,12-diethenyl-3,8,13,17-tetramethyl-21H,23H-porphine-2,18-dipropanoato(4-)-κN²¹,κN²²,κN²³,κN²⁴]-cobaltate(2-), dihydrogen
Synonym: Cobaltic Protoporphyrin IX Chloride
MF: C₃₄H₃₀ClCoN₄O₄ • 2H
FW: 655.0
Purity: ≥95%
UV/Vis.: λ_{max}: 234, 420 nm
Supplied as: A solid
Storage: -20°C
Stability: ≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Cobaltic(III) protoporphyrin IX chloride is supplied as a solid. A stock solution may be made by dissolving the cobaltic(III) protoporphyrin IX chloride in the solvent of choice, which should be purged with an inert gas. Cobaltic(III) protoporphyrin IX chloride is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of cobaltic(III) protoporphyrin IX chloride in ethanol is approximately 1 mg/ml and approximately 25 and 30 mg/ml in DMSO and DMF.

Cobaltic(III) protoporphyrin IX chloride is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, cobaltic(III) protoporphyrin IX chloride should first be dissolved in DMF and then diluted with the aqueous buffer of choice. Cobaltic(III) protoporphyrin IX chloride has a solubility of approximately 0.14 mg/ml in a 1:6 solution of DMF:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

Cobaltic(III) protoporphyrin IX chloride is a metalloporphyrin and an inducer of heme oxygenase-1 (HO-1) activity.¹ Unlike other metalloporphyrins, cobaltic(III) protoporphyrin IX chloride induces activity of HO-1, the rate-limiting enzyme in heme catabolism, *in vitro* and *in vivo*.^{1,2} It also reduces the activity of δ-aminolevulinic acid synthase, the enzyme that catalyzes the rate-limiting step of heme biosynthesis, as well as decreases the activity of cytochrome P450 (CYP), in rat liver microsomes *ex vivo* when administered at a dose of 125 μmol/kg.² Cobaltic(III) protoporphyrin IX chloride (5 mg/kg) prevents liver injury and increases in the percentage of hepatic apoptotic cells in a mouse model of liver ischemia-reperfusion injury.³ It increases survival and decreases the number of lung colony forming units (CFUs) in mice infected with *Y. pestis* at the same dose.⁴ Cobaltic(III) protoporphyrin IX chloride has also been used as a catalyst for the electrochemical reduction of carbon dioxide in carbon electrodes.⁵

References

1. Shan, Y., Lambrecht, R.W., Donohue, S.E., *et al.* *FASEB J.* **20(14)**, 2651-2653 (2006).
2. Drummond, G.S. and Kappas, A. *Proc. Natl. Acad. Sci. USA* **79(7)**, 2384-2388 (1982).
3. Li, J., Wu, B., Teng, D., *et al.* *Mol. Med. Rep.* **17(3)**, 4567-4572 (2018).
4. Willix, J.L., Stockton, J.L., Olson, R.M., *et al.* *Antimicrob. Agents Chemother.* **64(4)**, e01819-19 (2020).
5. Shen, J., Kortlever, R., Kas, R., *et al.* *Nat. Commun.* **6**, 8177 (2015).

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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