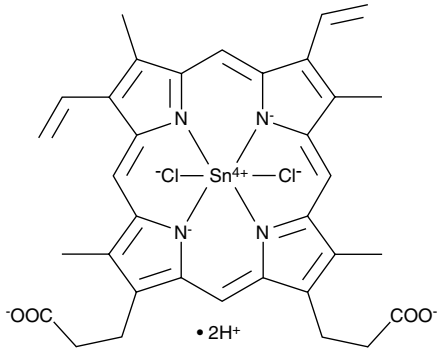
Product Information

Tin Protoporphyrin IX (chloride)

Item No. 16375

CAS Registry No.: 14325-05-4
Formal Name: (OC-6-13)-dichloro[7,12-diethenyl-3,8,13,17-tetramethyl-21H,23H-porphine-2,18-dipropanoato(4-)-κN^{21},κN^{22},κN^{23},κN^{24}]-stannate(2-), dihydrogen
Synonyms: NSC 267099, SnPPIX
MF: $C_{34}H_{30}Cl_2N_4O_4Sn \bullet 2H$
FW: 750.3
Stability: ≥2 years at -20°C
Supplied as: A crystalline solid
UV/Vis.: λ_{max}: 405, 541, 579 nm



Laboratory Procedures

For long term storage, we suggest that tin protoporphyrin IX (SnPPIX) (chloride) be stored as supplied at -20°C. It should be stable for at least two years.

SnPPIX (chloride) is supplied as a crystalline solid. A stock solution may be made by dissolving the SnPPIX (chloride) in the solvent of choice. SnPPIX (chloride) is soluble in organic solvents such as DMSO and dimethyl formamide (DMF), which should be purged with an inert gas. The solubility of SnPPIX (chloride) in these solvents is approximately 0.5 and 1 mg/ml, respectively.

SnPPIX (chloride) is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, SnPPIX (chloride) should first be dissolved in DMF and then diluted with the aqueous buffer of choice. SnPPIX (chloride) has a solubility of approximately 0.5 mg/ml in a 1:1 solution of DMF:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Heme oxygenase (HO) converts protoheme to biliverdin, which in turn is enzymatically metabolized to bilirubin (Item No. 17161). While HO-2 is constitutively expressed, HO-1 can be induced by its heme substrate as well as by heavy metals, oxidizing agents, and other environmental stresses.[1-3] SnPPIX is a synthetic heme analog that selectively inhibits HO-1 (K_i = 11 nM) over HO-2 (IC_{50} = 7.5 µM).[4-5] It also weakly inhibits endothelial nitric oxide synthase and soluble guanylyl cyclase (IC_{50}s = 35 and 30 nM, respectively).[5] SnPPIX prevents hyperbilirubinemia in neonates by blocking HO-1 activity that increases postnatally.[4] It is rapidly cleared from plasma and persists in certain tissues, including kidney, liver, and spleen.[6] SnPPIX is commonly used as a tool to study the role of HO-1 activity in cells and in animals.[7-8]

References

1. Kim, A.N., Jeon, W.K., Lee, J.J., *et al. Free Radic. Biol. Med.* **49(3)**, 323-331 (2010).
2. Cable, E.E., Gildemeister, O.S., Pepe, J.A., *et al. Mol. Cell. Biochem.* **169**, 13-20 (1997).
3. Surh, Y.-J., Kundu, J.K., Li, M.-H., *et al. Arch. Pharm. Res.* **32(8)**, 1163-1176 (2009).
4. Drummond, G.S. and Kappas, A. *Proc. Natl. Acad. Sci. USA* **78(10)**, 6466-6470 (1981).
5. Zakhary, R., Gaine, S.P., Dinerman, J.L., *et al. Proc. Natl. Acad. Sci. USA* **93(2)**, 795-798 (1996).
6. Anderson, K.E., Simionatto, C.S., Drummond, G.S., *et al. J. Pharmacol. Exp. Ther.* **228(2)**, 327-333 (1984).
7. Byun, S.J., Son, Y., and Pae, H.-O. *Eur. Rev. Med. Pharmacol. Sci.* **18(7)**, 949-958 (2014).
8. Zhang, M., Wang, S., Mao, L., *et al. J. Neurosci.* **34(5)**, 1903-1915 (2014).

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