# **PRODUCT** INFORMATION



## Tin(IV) 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 <sup>21</sup> ,κN <sup>22</sup> ,κN <sup>23</sup> ,κN <sup>24</sup> ]-	
	stannate(2-), dihydrogen	Ń Ń
Synonyms:	NSC 267099, SnPPIX	
MF:	$C_{34}H_{30}Cl_2N_4O_4Sn \bullet 2H$	
FW:	750.3	N- N
UV/Vis.:	λ <sub>may</sub> : 405, 541, 579 nm	
Supplied as:	A crystalline solid	
Storage:	-20°C	•2H+COO
Stability:	≥4 years	

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

#### Laboratory Procedures

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

Tin(IV) protoporphyrin IX chloride is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, tin(IV) protoporphyrin IX chloride should first be dissolved in DMF and then diluted with the aqueous buffer of choice. Tin(IV) protoporphyrin IX 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.

#### Description

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.<sup>1-3</sup> Tin(IV) protoporphyrin IX chloride is a synthetic heme analog that selectively inhibits HO-1 ( $K_i = 11 \text{ nM}$ ) over HO-2 (IC<sub>50</sub> = 7.5  $\mu$ M).<sup>4,5</sup> It also weakly inhibits endothelial nitric oxide synthase and soluble guanylyl cyclase  $(IC_{50}s = 35 \text{ and } 30 \text{ nM}, \text{ respectively}).^5 \text{ Tin}(IV) protoporphyrin IX chloride prevents hyperbilirubinemia in$ neonates by blocking HO-1 activity that increases postnatally.<sup>4</sup> It is rapidly cleared from plasma and persists in certain tissues, including kidney, liver, and spleen.<sup>6</sup> Tin(IV) protoporphyrin IX chloride is commonly used as a tool to study the role of HO-1 activity in cells and in animals.<sup>7,8</sup>

#### References

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

#### SAFFTY 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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