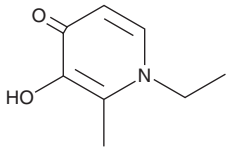
PRODUCT INFORMATION

CP21

Item No. 33318

CAS Registry No.:	30652-12-1
Formal Name:	1-ethyl-3-hydroxy-2-methyl-4(1H)-pyridinone
MF:	$C_8H_{11}NO_2$
FW:	153.2
Purity:	≥98%
UV/Vis.:	λ_{max}: 218, 285 nm
Supplied as:	A crystalline 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

CP21 is supplied as a crystalline solid. A stock solution may be made by dissolving the CP21 in the solvent of choice, which should be purged with an inert gas. CP21 is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of CP21 in ethanol is approximately 10 mg/ml and approximately 1 mg/ml in DMSO and DMF.

CP21 is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, CP21 should first be dissolved in ethanol and then diluted with the aqueous buffer of choice. CP21 has a solubility of approximately 0.20 mg/ml in a 1:4 solution of ethanol:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

CP21 is an iron chelator that binds to iron in a 3:1 (ligand:iron) ratio.[1] It is active against *P. falciparum* when used at concentrations of 10 and 100 µM.[2] CP21 inhibits production of prostaglandin I_2 (PGI_2; Item No. 18220) induced by epinephrine, arachidonic acid (Item Nos. 90010 | 90010.1 | 10006607), or A23187 (Item No. 11016) in isolated rat aortic rings with IC_{50} values of 1.3, 1.3, and 1.4 mM, respectively.[3] It inhibits glutamate-induced oxytosis, as well as decreases iodoacetic acid-induced cytotoxicity in an *in vitro* model of ischemia, in HT22 mouse hippocampal cells (EC_{50}s = 13 and 9.5 µM, respectively).[4] CP21 (200 mg/kg) increases the excretion of iron, but not copper, zinc, calcium, or magnesium, in rabbits.[5]

References

1. Dobbin, P.S., Hider, R.C., Hall, A.D., *et al.* Synthesis, physicochemical properties, and biological evaluation of N-substituted 2-alkyl-3-hydroxy-4(1H)-pyridinones: Orally active iron chelators with clinical potential. *J. Med. Chem.* **36(17)**, 2448-2458 (1993).
2. Heppner, D.G., Hallaway, P.E., Kontoghiorghes, G.J., *et al.* Antimalarial properties of orally active iron chelators. *Blood* **72(1)**, 358-361 (1988).
3. Jeremy, J.Y., Kontoghiorghes, G.J., Hoffbrand, A.V., *et al.* The iron chelators desferrioxamine and 1-alkyl-2-methyl-3-hydroxypyrid-4-ones inhibit vascular prostacyclin synthesis *in vitro*. *Biochem. J.* **254(1)**, 239-244 (1988).
4. Maher, P. and Kontoghiorghes, G.J. Characterization of the neuroprotective potential of derivatives of the iron chelating drug deferiprone. *Neurochem. Res.* **40(3)**, 609-620 (2015).
5. Kontoghiorghes, G.J. and Hoffbrand, A.V. Orally active α-ketohydroxy pyridine iron chelators intended for clinical use: *In vivo* studies in rabbits. *Br. J. Haematol.* **62(4)**, 607-613 (1986).

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