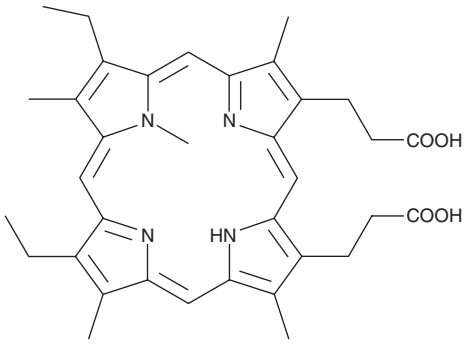
PRODUCT INFORMATION

N-methyl Mesoporphyrin IX

Item No. 27210

CAS Registry No.:	142234-85-3
Formal Name:	8,13-diethyl-3,7,12,17,23-pentamethyl-21H,23H-porphine-2,18-dipropanoic acid
MF:	$C_{35}H_{40}N_4O_4$
FW:	580.7
Purity:	≥95% (mixture of isomers)
UV/Vis.:	λ_{max}: 299, 395, 564 nm
Ex./Em. Max:	399/610 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

N-methyl Mesoporphyrin IX is supplied as a crystalline solid. A stock solution may be made by dissolving the N-methyl mesoporphyrin IX in the solvent of choice, which should be purged with an inert gas. N-methyl Mesoporphyrin IX is soluble in organic solvents such as DMSO and dimethyl formamide (DMF). The solubility of N-methyl mesoporphyrin IX in these solvents is approximately 15 and 20 mg/ml, respectively.

N-methyl Mesoporphyrin IX is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, N-methyl mesoporphyrin IX should first be dissolved in DMF and then diluted with the aqueous buffer of choice. N-methyl Mesoporphyrin IX has a solubility of approximately 0.17 mg/ml in a 1:5 solution of DMF:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

N-methyl Mesoporphyrin IX is a transition state analog of porphyrin and an inhibitor of ferrochelatase.[1] It inhibits ferrochelatase in mouse liver mitochondria *in vitro* and *in vivo*, leading to an accumulation of porphyrin in isolated liver mitochondria following administration of an intravenous dose of 80 nmol. N-methyl Mesoporphyrin IX has been used as a turn-on biosensor for target DNA sequences when used in complex with a G-quadruplex-forming sequence fused to a DNA sequence complementary to the target sequence.[2] It has also been used to detect amyloid-β (1-40) (Aβ40) fibrils *in vitro* and in live PC12 cells overexpressing Aβ.[3] N-methyl Mesoporphyrin displays excitation/emission maxima of 399/610 nm, respectively.[4]

References

1. de Matteis, F., Gibbs, A.H., and Smith, A.G. Inhibition of protohaem ferro-lyase by *N*-substituted porphyrins. Structural requirements for the inhibitory effect. *Biochem. J.* **189(3)**, 645-648 (1980).
2. Ren, J., Qin, H., Wang, J., *et al.* Label-free detection of nucleic acids by turn-on and turn-off G-quadruplex-mediated fluorescence. *Anal. Bioanal. Chem.* **399(8)**, 2763-2770 (2011).
3. Li, M., Zhao, A., Ren, J., *et al.* N-Methyl mesoporphyrin IX as an effective probe for monitoring Alzheimer's disease *β*-amyloid aggregation in living cells. *ACS Chem. Neurosci.* **8(6)**, 1299-1304 (2017).
4. Paramasivan, S. and Bolton, P.H. Mix and measure fluorescence screening for selective quadruplex binders. *Nucleic Acids Res.* **36(17)**, e106 (2008).

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