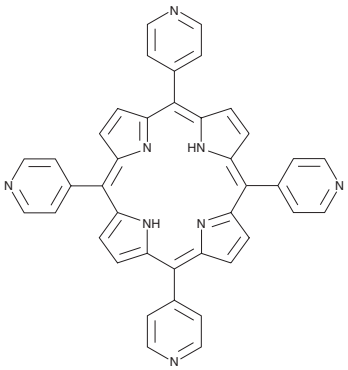
PRODUCT INFORMATION

5,10,15,20-Tetra(4-pyridyl)porphyrin

Item No. 45666

CAS Registry No.:	16834-13-2
Formal Name:	5,10,15,20-tetra-4-pyridinyl-21H,23H-porphine
Synonyms:	2HTPyP, H_2TPyP, 5,10,15,20-Tetra(4-pyridyl)-*21H,23H*-porphine, *meso*-Tetra(4-pyridyl)porphine, *Tetrakis*(4-pyridyl)porphyrin, T4PP, 4-TPyP, TPyP
MF:	$C_{40}H_{26}N_8$
FW:	618.7
Purity:	≥95%
Abs. Max:	417 nm, with a shift upon metal complex formation
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

5,10,15,20-Tetra(4-pyridyl)porphyrin is supplied as a solid. A stock solution may be made by dissolving the 5,10,15,20-Tetra(4-pyridyl)porphyrin in the solvent of choice, which should be purged with an inert gas. 5,10,15,20-Tetra(4-pyridyl)porphyrin is slightly soluble (0.1-1 mg/ml) in a 1:1 solution of methanol:chloroform.

Description

5,10,15,20-Tetra(4-pyridyl)porphyrin is a synthetic building block that can form coordination complexes with transition metals.[1] It displays an absorbance maximum at 417 nm that shifts upon complex formation with metal ions and has been used as a sensor for the detection of metal ions in water samples, aqueous solutions, and biological assays.[2,3] Metal complexes synthesized from 5,10,15,20-tetra(4-pyridyl)porphyrin have been used as photosensitizers that reduce the viability of cancer cells *in vitro*.[4] 5,10,15,20-Tetra(4-pyridyl)porphyrin has been used to form metal-organic frameworks (MOFs) for the photocatalytic treatment of wastewater.[5]

References

1. Lopes, J.M.S., Sampaio, R.N., Ito, A.S., *et al.* Evolution of electronic and vibronic transitions in metal(II) meso-tetra(4-pyridyl)porphyrins. *Spectrochim. Acta A Mol. Biomol. Spectrosc.* **215**, 327-333 (2019).
2. Qian, D.-J., Planner, A., Miyake, J., *et al.* Photothermal effects and fluorescence spectra of tetrapyridylporphyrins. *J. Photochem. Photobiol. A Chem.* **144**, 93-99 (2001).
3. Qi, Z.-L., Cheng, Y.-H., Xu, Z., *et al.* Recent advances in porphyrin-based materials for metal ions detection. *Int. J. Mol. Sci.* **21(16)**, 5839 (2020).
4. Ehlert, M.E., Ferreira, V.G., Pacheco, B.S., *et al.* Three palladium(II) meso-tetra(pyridyl) porphyrin derivatives for anticancer photodynamic therapy: An in vitro comparative oncology framework in human and canine melanoma. *J. Photochem. Photobiol. B.* **277**, 113389 (2026).
5. Shee, N.K. and Kim, H.-J. Recent developments in porphyrin-based metal-organic framework materials for water remediation under visible-light irradiation. *Int. J. Mol. Sci.* **25(8)**, 4183 (2024).

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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