

PRODUCT INFORMATION



1-Palmitoyl-2-Pyropheophorbide *a*-sn-glycero-3-PC

Item No. 38430

CAS Registry No.: 1287795-07-6
Formal Name: (7R)-7-[3-[(3S,4S)-9-ethenyl-14-ethyl-4,8,13,18-tetramethyl-20-phorbiny]-1-oxopropoxy]-4-hydroxy-N,N,N-trimethyl-10-oxo-3,5,9-trioxo-4-phosphapentacosan-1-aminium, 4-oxide, inner salt

Synonyms: 1-Palmitoyl-2-Pyropheophorbide *a*-sn-glycero-3-Phosphatidylcholine, 1-Palmitoyl-2-Pyropheophorbide *a*-sn-glycero-3-Phosphocholine, Porphyrin-lipid, Pyro-PtdCho

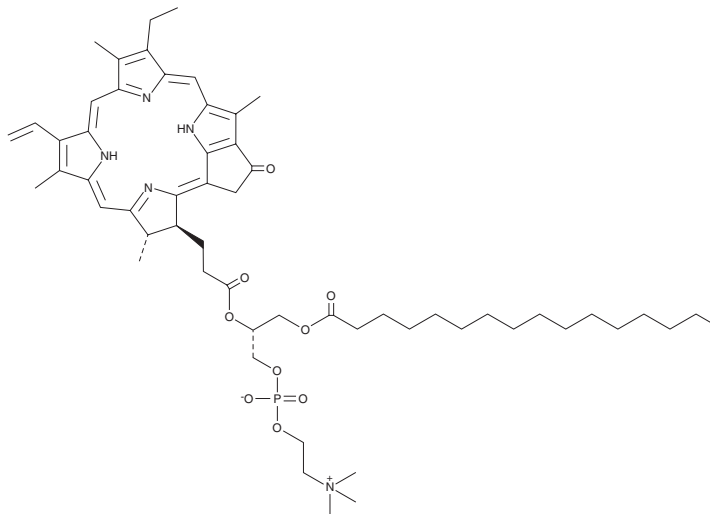
MF: C₅₇H₈₂N₅O₉P

FW: 1,012.3

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

1-Palmitoyl-2-pyropheophorbide *a*-sn-glycero-3-PC is supplied as a crystalline solid. A stock solution may be made by dissolving the 1-palmitoyl-2-pyropheophorbide *a*-sn-glycero-3-PC in the solvent of choice, which should be purged with an inert gas. 1-Palmitoyl-2-pyropheophorbide *a*-sn-glycero-3-PC is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of 1-palmitoyl-2-pyropheophorbide *a*-sn-glycero-3-PC in these solvents is approximately 1 mg/ml.

Description

1-Palmitoyl-2-pyropheophorbide *a*-sn-glycero-3-PC is a phospholipid-porphyrin conjugate that is composed of phosphatidylcholine containing palmitic acid (Item No. 10006627) at the *sn*-1 position and the photosensitizer pyropheophorbide *a* (Item No. 21371) at the *sn*-2 position.¹ Lipid nanoparticles (LNPs) containing 1-palmitoyl-2-pyropheophorbide *a*-sn-glycero-3-PC and encapsulating FAM-labeled siRNA are dissociated under irradiation with near-infrared light (NIR) in PC3-Luc6 cells. 1-Palmitoyl-2-pyropheophorbide *a*-sn-glycero-3-PC then enters the endolysosomal membrane and generates reactive oxygen species (ROS), which disrupt the membrane and allow the release of FAM-labeled siRNA into the cytosol. 1-Palmitoyl-2-pyropheophorbide *a*-sn-glycero-3-PC-stabilized nanoemulsions loaded with the mitotic inhibitor paclitaxel (Item No. 10461), combined with laser irradiation, reduce tumor growth and increase survival in a KB squamous cell carcinoma mouse xenograft model.²

References

1. Mo, Y., Cheng, M.H.Y., D'Elia, A., *et al.* Light-activated siRNA endosomal release (LASER) by porphyrin lipid nanoparticles. *ACS Nano* **17**(5), 4688-4703 (2023).
2. Chang, E., Bu, J., Ding, L., *et al.* Porphyrin-lipid stabilized paclitaxel nanoemulsion for combined photodynamic therapy and chemotherapy. *J. Nanobiotechnology* **19**(1), 154 (2021).

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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