

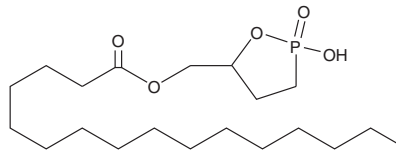
PRODUCT INFORMATION



Palmitoyl 3-carbacyclic Phosphatidic Acid

Item No. 10010293

CAS Registry No.: 476310-22-2
Formal Name: (2-hydroxy-2-oxido-1,2-oxaphospholan-5-yl) methyl ester-hexadecanoic acid
Synonym: 3-ccPA 16:0
MF: C₂₀H₃₉O₅P
FW: 390.5
Purity: ≥95%
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

Palmitoyl 3-carbacyclic phosphatidic acid (3-ccPA 16:0) is supplied as a crystalline solid. Aqueous solutions of 3-ccPA 16:0 can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of 3-ccPA 16:0 in PBS (pH 7.2) is approximately 0.5 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Cyclic phosphatidic acids (cPAs) are naturally occurring analogs of lysophosphatidic acid (LPA) in which the *sn*-2 hydroxy group forms a 5-membered ring with the *sn*-3 phosphate.^{1,2} Carba-derivatives of cPA (ccPA) are modified at the *sn*-2 (2-ccPA) or *sn*-3 (3-ccPA) linkage, preventing the opening of cPA to produce LPA.³ Palmitoyl 3-ccPA is a cyclic LPA analog that contains the 16:0 fatty acid, palmitate, at the *sn*-1 position of the glycerol backbone.³ At 25 μM, it inhibits the transcellular migration of MM1 cells across mesothelial cell monolayers in response to fetal bovine serum (81.9%) or LPA (98.9%) without affecting proliferation.³ 3-ccPA 16:0, at 0.1-25 μM, significantly inhibits autotaxin, an enzyme that is important in cancer cell survival, growth, migration, invasion, and metastasis.^{4,5}

References

1. Kobayashi, T., Tanaka-Ishii, R., Taguchi, R., *et al.* Existence of a bioactive lipid, cyclic phosphatidic acid, bound to human serum albumin. *Life Sci.* **65(21)**, 2185-2191 (1999).
2. Mukai, M., Imamura, F., Ayaki, M., *et al.* Inhibition of tumor invasion and metastasis by a novel lysophosphatidic acid (cyclic LPA). *Int. J. Cancer* **81**, 918-922 (1999).
3. Uchiyama, A., Mukai, M., Fujiwara, Y., *et al.* Inhibition of transcellular tumor cell migration and metastasis by novel carba-derivatives of cyclic phosphatidic acid. *Biochim. Biophys. Acta* **1771**, 103-112 (2007).
4. Baker, D.L., Fujiwara, Y., Pigg, K.R., *et al.* Carba analogs of cyclic phosphatidic acid are selective inhibitors of autotaxin and cancer cell invasion and metastasis. *J. Biol. Chem.* **281(32)**, 22786-22793 (2006).
5. Prestwich, G.D., Gajewiak, J., Zhang, H., *et al.* Phosphatase-resistant analogues of lysophosphatidic acid: Agonists promote healing, antagonists and autotaxin inhibitors treat cancer. *Biochim. Biophys. Acta* **1781**, 588-594 (2008).

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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