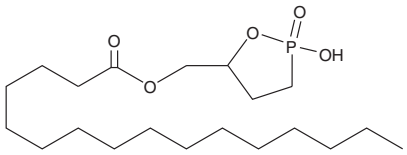
PRODUCT INFORMATION

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:	$C_{20}H_{39}O_5P$
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).

CAYMAN CHEMICAL
1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA
PHONE: [800] 364-9897
[734] 971-3335
FAX: [734] 971-3640
CUSTSERV@CAYMANCHEM.COM
WWW.**CAYMANCHEM**.COM