

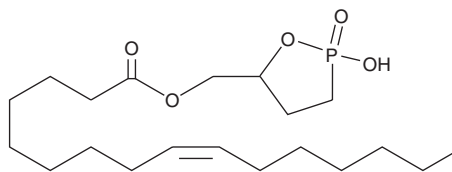
# PRODUCT INFORMATION



## Palmitoleoyl 3-carbacyclic Phosphatidic Acid

Item No. 10010298

**CAS Registry No.:** 910228-13-6  
**Formal Name:** 9Z-hexadecenoic acid, (2-hydroxy-2-oxido-1,2-oxaphospholan-5-yl) methyl ester  
**Synonyms:** 3-carbacyclic PA, 3-ccPA 16:1  
**MF:** C<sub>20</sub>H<sub>37</sub>O<sub>5</sub>P  
**FW:** 388.5  
**Purity:** ≥95%  
**Supplied as:** A solution in chloroform  
**Storage:** -20°C  
**Stability:** ≥2 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

### Laboratory Procedures

Palmitoleoyl 3-carbacyclic phosphatidic acid (3-ccPA 16:1) is supplied as a solution in chloroform. 3-ccPA 16:1 is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, the chloroform solution of 3-ccPA 16:1 should be diluted with the aqueous buffer of choice. The solubility of 3-ccPA 16:1 in PBS (pH 7.2) is approximately 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.<sup>1,2</sup> 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 lysophosphatidic acid (LPA).<sup>3</sup> 3-ccPA 16:1 is a cyclic LPA analog that contains the 16:1 fatty acid, palmitoleate, at the *sn*-1 position of the glycerol backbone.<sup>3</sup> At 25 μM, it inhibits the transcellular migration of MM1 cells across mesothelial cell monolayers in response to fetal bovine serum (86.9%) or LPA (99.9%) without affecting proliferation.<sup>3</sup> 3-ccPA 16:1 significantly inhibits autotaxin (IC<sub>50</sub> = 620 nM), an enzyme that is important in cancer cell survival, growth, migration, invasion and metastasis.<sup>4</sup> When delivered intraperitoneally, 3-ccPA 16:1 significantly reduces the number of lung metastases formed in mice injected with B16F10 melanoma cells in the tail vein.<sup>4</sup>

### 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(6)**, 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(1)**, 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).

#### 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.

#### WARRANTY AND LIMITATION OF REMEDY

Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

Copyright Cayman Chemical Company, 07/09/2024

#### 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