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PRODUCT INFORMATION



Oleoyl 3-carbacyclic Phosphatidic Acid

Item No. 10010299

CAS Registry No.: 779333-58-3

Formal Name: (9Z)-9-octadecenoic acid,
(2-hydroxy-2-oxido-1,2-oxaphospholan-5-yl)methyl ester

Synonym: 3-ccPA 18:1

MF: C₂₂H₄₁O₅P

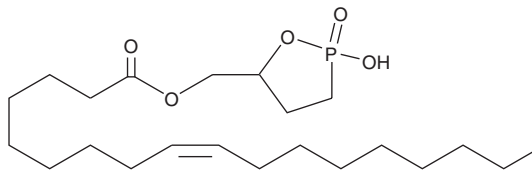
FW: 416.5

Purity: ≥95%

Supplied as: A solution in chloroform

Storage: -20°C

Stability: As supplied, 1 year from the QC date provided on the Certificate of Analysis, when stored properly



Laboratory Procedures

Oleoyl 3-carbacyclic phosphatidic acid (3-ccPA 18:1) is supplied as a solution in chloroform. 3-ccPA 18:1 is sparingly soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. For biological experiments, we suggest that organic solvent-free aqueous solutions of 3-ccPA 18:1 be prepared by evaporating the chloroform and dissolving the neat oil in aqueous buffers. The solubility of 3-ccPA 18:1 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.^{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 lysophosphatidic acid (LPA).³ Oleoyl 3-carbacyclic phosphatidic acid (3-ccPA 18:1) is a cyclic LPA analog that contains the 18:1 fatty acid, oleate, at the *sn*-1 position of the glycerol backbone. At 25 μM, it inhibits the transcellular migration of MM1 cells across mesothelial cell monolayers in response to fetal bovine serum (90.1%) or LPA (99.9%) without affecting proliferation.³ 3ccPA 18:1, at 0.1-1.0 μM, significantly inhibits autotaxin,^{4,5} an enzyme that is important in cancer cell survival, growth, migration, invasion, and metastasis.

References

1. Kobayashi, T., Tanaka-Ishii, R., Taguchi, R., *et al.* *Life Sci.* **65(21)**, 2185-2191 (1999).
2. Mukai, M., Imamura, F., Ayaki, M., *et al.* *Int. J. Cancer* **81**, 918-922 (1999).
3. Uchiyama, A., Mukai, M., Fujiwara, Y., *et al.* *Biochim. Biophys. Acta* **1771**, 103-112 (2007).
4. Baker, D.L., Fujiwara, Y., Pigg, K.R., *et al.* *J. Biol. Chem.* **281(32)**, 22786-22793 (2006).
5. Prestwich, G.D., Gajewiak, J., Zhang, H., *et al.* *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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