

Product Data Sheet

Product Name: PGPC
Cat. No.: GC44616

Chemical Properties

Cas. No. 89947-79-5

Chemical Name 1-palmitoyl-2-glutaryl phosphatidylcholine

SMILES CCCCCCCCCCCCCCCC(=O)OC[C@H](COP(=O)(O)OCC[N](C)(C)C)OC(=O)CCCC(=O)O

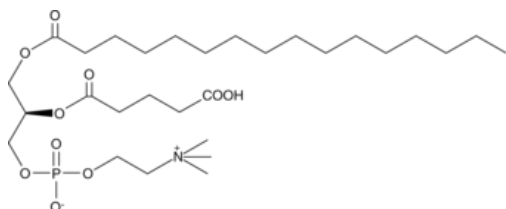
Formula $C_{29}H_{56}NO_{10}P$ M.Wt 609.7

Solubility 20mg/mL in ethanol, 1mg/mL in DMSO Storage Store at -20°C

General tips For obtaining a higher solubility, please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution: ship with blue ice. All other available size: ship with RT, or blue ice upon request.

Structure



Background

PGPC is an oxidized phospholipid that can be formed under conditions of oxidative stress. [1] It is found as a component in mildly oxidized LDL (MM-LDL) and in products formed from the oxidation of 1-palmitoyl-2-arachidonoyl-sn-glycero-3-phosphocholine (Ox-PAPC). [2] PGPC activates peroxisome proliferator-activated receptor (PPAR α) in a concentration-dependent manner in a cell-based ligand-binding assay. [3] It increases VCAM1 and E-selectin expression in human aortic endothelial cells (HAECs), as well as HAEC binding by monocytes and polymorphonuclear neutrophils (PMNs), in a concentration-dependent manner. [4] PGPC (37.5 μ M) also increases total 5-lipoxygenase metabolites in murine resident peritoneal macrophages (RPMs) and induces apoptosis in A7r5 rat

Caution: Product has not been fully validated for medical applications. For research use only.

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aortic smooth muscle cells in vitro when used at a concentration of 50 μ M.[5][6] PGPC levels are increased in the serum, LDL, and peripheral blood mononuclear cells (PBMCs) of patients with coronary artery disease. [7] UVA irradiation increases PGPC levels in cultured human skin fibroblasts. [8]

Reference:

- [1]. Fruhwirth, G.O., Loidl, A., and Hermetter, A. Oxidized phospholipids: From molecular properties to disease. *Biochimica et Biophysica Acta* 1772, 718-736 (2007).
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- [5]. Zemski Berry, K.A., and Murphy, R.C. Phospholipid ozonation products activate the 5-lipoxygenase pathway in macrophages. *Chem. Res. Toxicol.* 29(8), 1355-1364 (2016).
- [6]. Fruhwirth, G.O., Moutzi, A., Loidl, A., et al. The oxidized phospholipids POVPC and PGPC inhibit growth and induce apoptosis in vascular smooth muscle cells. *Biochim. Biophys. Acta.* 1761(9), 1060-1069 (2006).
- [7]. Mozzini, C., Frata Pasini, A., Garbin, U., et al. Increased endoplasmic reticulum stress and Nrf2 repression in peripheral blood mononuclear cells of patients with stable coronary artery disease. *Free Radic. Biol. Med.* 68, 178-185 (2014).
- [8]. Gruber, F., Bicker, W., Oskolkova, O.V., et al. A simplified procedure for semi-targeted lipidomic analysis of oxidized phosphatidylcholines induced by UVA irradiation. *J. Lipid. Res.* 53(6), 1232-1242 (2012).

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