

Product Data Sheet

Product Name: Thioetheramide-PC

Cat. No.: GC11116

Chemical Properties

Cas. No. 116457-99-9

Chemical Name 1,2-dideoxy-1-(S-hexadecyl)thio-2-(N-hexadecanoyl)amino-*sn*-glyceryl-3-phosphorylcholine

SMILES CCCCCCCCCCCCCCCC(N[C@@H](COP(=O)(OCC[N+](C)(C)C)([O-])=O)CSCCCCCCCCCCCCCCCCCC)=O

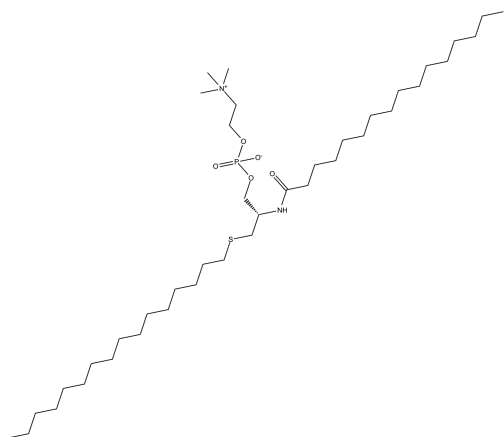
Formula $C_{40}H_{83}N_2O_5PS$ M.Wt 735.1

Solubility 4.25 mM Triton X-100: soluble (per reference), Ethanol: 10 mg/ml (@ roomtemp) 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

Thioetheramide-PC is a competitive, reversible inhibitor of secretory phospholipase A2 (sPLA2) [1]. Thioetheramide-PC is a structurally modified phospholipid.

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

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PLA2s hydrolyze the sn-2 ester bond of phospholipids, releasing fatty acids and lysophospholipids, both of which may alter cell function. PLA2s play vital roles in cellular signaling and a wide number of pathophysiological situations, ranging from systemic and acute inflammatory conditions to cancer [2]. sPLA2 promote inflammation in mammals. High levels of sPLA2 contributes to several inflammatory diseases, and has been shown to promote vascular inflammation correlating with coronary events in coronary artery disease and acute coronary syndrome, and possibly leading to acute respiratory distress syndrome and progression of tonsillitis [3].

Thioetheramide-PC inhibited secretory phospholipase A2 (sPLA2) by binding to the catalytic site of sPLA2. The IC₅₀ value was 2 μ M [1]. Thioetheramide-PC could also bind to the activator site of this enzyme, which was tighter than its binding to the catalytic site. This dual interaction was that at low concentrations thioetheramide-PC might activate phospholipase activity rather than inhibiting it [1].

References:

- [1] Yu L, Deems R A, Hajdu J, et al. The interaction of phospholipase A2 with phospholipid analogues and inhibitors[J]. Journal of Biological Chemistry, 1990, 265(5): 2657-2664.
- [2] Balsinde J, Balboa M A, Insel P A, et al. Regulation and inhibition of phospholipase A2[J]. Annual Review of Pharmacology and Toxicology, 1999, 39(1): 175-189.
- [3] Mallat Z, Lambeau G, Tedgui A. Lipoprotein-associated and secreted phospholipases A2 in cardiovascular disease[J]. Circulation, 2010, 122(21): 2183-2200.

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