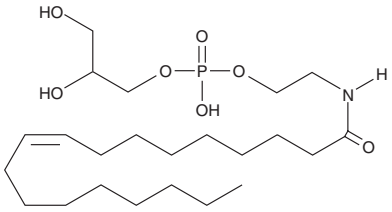
PRODUCT INFORMATION

Glycerophospho-N-Oleoyl Ethanolamine

Item No. 10011357

CAS Registry No.:	201738-24-1
Formal Name:	mono(2,3-dihydroxypropyl)-mono[2-[[(9Z)-1-oxo-9-octadecenyl]amino]ethyl] ester phosphoric acid
MF:	$C_{23}H_{46}NO_7P$
FW:	479.6
Purity:	≥98%
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

Glycerophospho-N-oleoyl ethanolamine is supplied as a crystalline solid. A stock solution may be made by dissolving the glycerophospho-N-oleoyl ethanolamine in the solvent of choice, which should be purged with an inert gas. Glycerophospho-N-oleoyl ethanolamine is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of glycerophospho-N-oleoyl ethanolamine in these solvents is approximately 20 mg/ml.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of glycerophospho-N-oleoyl ethanolamine can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of glycerophospho-N-oleoyl ethanolamine in PBS (pH 7.2) is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

N-Acylated ethanolamines (NAE) are naturally-occurring lipids that have diverse bioactivities. For example, arachidonoyl ethanolamide (AEA) is an endogenous cannabinoid neurotransmitter that evokes cellular responses by activating the cannabinoid receptors, central cannabinoid (CB_1) and peripheral cannabinoid (CB_2). The different types of NAE are derived from glycerophospho-linked precursors by the activity of glycerophosphodiesterase 1 (GDE1).[1] Glycerophospho-N-oleoyl ethanolamine is the precursor of oleoyl ethanolamide (OEA). OEA is an endogenous, potent agonist for PPARα, exhibiting an EC_{50} value of 120 nM in a transactivation assay.[2] Systemic administration of OEA suppresses food intake and reduces weight gain in rats (10 mg/kg intraperitoneally) and PPARα wild-type mice, but not in PPARα knockout mice.[2,3] Like AEA, OEA is metabolized by fatty acid amide hydrolase (FAAH).

References

1. Simon, G.M. and Cravatt, B.F. Anandamide biosynthesis catalyzed by the phosphodiesterase GDE1 and detection of glycerophospho-N-acyl ethanolamine precursors in mouse brain. *J. Biol. Chem.* **283**, 9341-9349 (2008).
2. Fu, J., Gaetani, S., Oveisi, F., *et al.* Oleylethanolamide regulates feeding and body weight through activation of the nuclear receptor PPARα. *Nature* **425**, 90-93 (2003).
3. de Fonseca, F.R., Navarro, M., Gómez, R., *et al*. An anorexic lipid mediator regulated by feeding. *Nature* **414**, 209-212 (2001).

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