Product Data Sheet

Product Name: Glycerophospho-N-Oleoyl Ethanolamine
Cat. No.: GC14531

Chemical Properties

Cas. No.	201738-24-1		
Chemical Name	mono(2,3-dihydroxypropyl)-mono[2-[[(9Z)-1-oxo-9-octadecenyl]amino]ethyl] ester phosphoric acid		
SMILES	CCCCCCCC/C=C\CCCCCCCC(=O)NCCOP(=O)(O)OCC(O)CO		
Formula	$C_{23}H_{46}NO_7P$	M.Wt	479.6
Solubility	≤20mg/ml in ethanol;20mg/ml in DMSO;20mg/ml in dimethyl formamide	Storage	Store at -20°C
General tips	For obtaining a higher solubility , please warm the tube at 37 ℃ and shake it in the ultrasonic bath for a while.Stock solution can be stored below -20℃ 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

Glycerophospho-N-Oleoyl Ethanolamine is the precursor of oleoyl ethanolamide (OEA). The fatty-acid ethanolamide, oleoylethanolamide (OEA) is a naturally occurring lipid. Oleoylethanolamide is an endogenous PPAR-α agonist. Oleoylethanolamide has been involved in modulating feeding and energy homeostasis by binding to peroxisome proliferator-activated receptor-alpha (PPAR-α) [1]. PPAR-α is a transcription factor and a major regulator of lipid metabolism in the liver. Activation of PPAR-α is mainly involved in fatty acid oxidation and expressed in liver, kidney, and skeletal muscle. Through ligand binding, PPAR-α promotes uptake, utilization, and catabolism of fatty acids [2].

OEA reduced food intake and lowered body-weight gain. Subchronic OEA treatment (5 mg/kg, i.p., once daily for two weeks) in Zucker rats initiated transcription of PPAR-α and other PPAR-α target gene [1]. OEA is an endogenous, potent agonist for PPARα. OEA activated PPARα with an EC50 value of 120 nM in a transactivation assay [3]. In rodents,

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intraperitoneal administration of OEA induced satiety and peripheral utilization of lipid substrate. Acute oral administration induced satiety [4].

References:

[1] Fu J, Oveisi F, Gaetani S, et al. Oleoylethanolamide, an endogenous PPAR-α agonist, lowers body weight and hyperlipidemia in obese rats[J]. Neuropharmacology, 2005, 48(8): 1147-1153.
[2] Schiffrin E L, Amiri F, Benkirane K, et al. Peroxisome proliferator-activated receptors[J]. Hypertension, 2003, 42(4): 664-668.
[3] Fu J, Gaetani S, Oveisi F, et al. Oleylethanolamide regulates feeding and body weight through activation of the nuclear receptor PPAR-α[J]. Nature, 2003, 425(6953): 90-93.
[4] Thabuis C, Destaillats F, Tissot-Favre D, et al. Oleoyl-ethanolamide (OEA): A bioactive lipid derived from oleic acid and phosphatidylethanol-amine[J]. Lipid Technology, 2007, 19(10): 225-227.

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