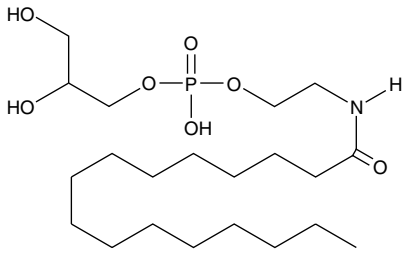
Product Information

Glycerophospho-N-Palmitoyl Ethanolamine

Item No. 10011356

CAS Registry No.: 100575-09-5
Formal Name: mono(2,3-dihydroxypropyl)-mono[2-[(1-oxohexadecyl)amino]ethyl]ester phosphoric acid
Synonyms: GP-NAE, GP-NPEA
MF: $C_{21}H_{44}NO_7P$
FW: 453.6
Purity: ≥98%
Stability: ≥2 years at -20°C
Supplied as: A crystalline solid



Laboratory Procedures

For long term storage, we suggest that glycerophospho-N-palmitoyl ethanolamine (GP-NPEA) be stored as supplied at -20°C. It should be stable for at least two years.

GP-NPEA is supplied as a crystalline solid. GP-NPEA 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 GP-NPE be prepared by directly dissolving the GP-NPEA compound in aqueous buffers. The solubility of GP-NPEA in PBS, pH 7.2, is approximately 5 mg/ml. We do not recommend storing the aqueous solution for more than one day.

N-Acylated ethanolamines (NAE) are naturally-occurring lipids that have diverse bioactivities. For example, arachidonoyl ethanolamide (AEA) is an endogenous neurotransmitter that evokes cellular responses by activating the central cannabinoid (CB_1) and peripheral cannabinoid (CB_2) receptors. The different types of NAE are derived from glycerophospho-linked precursors by the activity of glycerophosphodiesterase 1 (GDE_1).[1] GP-NPEA is the metabolic precursor of palmitoyl ethanolamide (PEA). PEA is an endogenous cannabinoid found in brain, liver, and other mammalian tissues,[2] that has potent anti-inflammatory activity *in vivo*.[3] PEA has low affinity for CB_2 and no appreciable affinity for CB_1,[4] suggesting that its efficacy is through a different receptor.

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. Bachur, N.R., Masek, K., Melmon, K.L., *et al.* Fatty acid amides of ethanolamine in mammalian tissues. *J. Biol. Chem.* **240**, 1019-1024 (1965).
3. Wise, L.E., Cannavacciulo, R., Cravatt, B.F., *et al.* Evaluation of fatty acid amides in the carrageenan-induced paw edema model. *Neuropharmacology* **54(1)**, 181-188 (2008).
4. Devane, W.A., Hanus, L., Breuer, A., *et al.* Isolation and structure of a brain constituent that binds to the cannabinoid receptor. *Science* **258**, 1946-1949 (1992).

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