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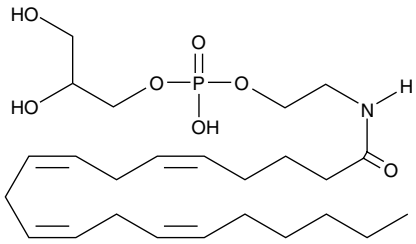
Product Information

Glycerophospho-N-Arachidonoyl Ethanolamine

Item No. 10011347

CAS Registry No.: 201738-25-2
Formal Name: mono(2,3-dihydroxypropyl)-mono[2-[[(5Z,8Z,11Z,14Z)-1-oxo-5,8,11,14-eicosatetraen-1-yl]ethyl]ester phosphoric acid
Synonyms: Glycerophosphoanandamide, Glycerophospho-Arachidonoyl Ethanolamide, GP-NArE
MF: $C_{25}H_{44}NO_7P$
FW: 501.6
Purity: ≥97%
Stability: ≥2 years at -20°C
Supplied as: A crystalline solid



Laboratory Procedures

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

GP-NArE is supplied as a crystalline solid. A stock solution may be made by dissolving the GP-NArE in an organic solvent purged with an inert gas. GP-NArE is soluble in organic solvents such as DMSO and dimethyl formamide. The solubility of GP-NArE 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 GP-NArE can be prepared by directly dissolving the crystalline compound in aqueous buffers. The solubility of GP-NArE in PBS, pH 7.2, is approximately 10 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. The different types of NAE can be derived from glycerophospho-linked precursors by the activity of glycerophosphodiesterase 1 (GDE_1).[1] GP-NArE is the precursor of arachidonoyl ethanolamide (AEA), also known as anandamide. AEA is an endogenous cannabinoid neurotransmitter that binds to both central cannabinoid (CB_1) and peripheral cannabinoid (CB_2) receptors.[2] It inhibits the specific binding of [^{3}H]-HU-243 to synaptosomal membranes with a K_i value of 52 nM, compared to 46 nM for Δ^9-THC.[3]

References

1. Simon, G.M. and Cravatt, B.F. Anandamide biosynthesis catalyzed by the phosphodiesterase GDE_1 and detection of glycerophospho-N-acyl ethanolamine precursors in mouse brain, [In Press] *J. Biol. Chem.* (2008).
2. Felder, C.C., Briley, E.M., Axelrod, J., *et al.* Anandamide, an endogenous cannabimimetic eicosanoid, binds to the cloned human cannabinoid receptor and stimulates receptor-mediated signal transduction. *Proc. Natl. Acad. Sci. USA* **90**, 7656-7660 (1993).
3. 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).

Related Products

For a list of related products please visit: www.caymanchem.com/catalog/10011347

WARNING: THIS PRODUCT IS FOR LABORATORY RESEARCH ONLY: NOT FOR ADMINISTRATION TO HUMANS. NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until information to the contrary becomes available. Do not ingest, swallow, or inhale. Do not get in eyes, on skin, or on clothing. Wash thoroughly after handling. This information contains some, but not all, of the information required for the safe and proper use of this material. Before use, the user must review the complete Safety Data Sheet, which has been sent *via* email to your institution.

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