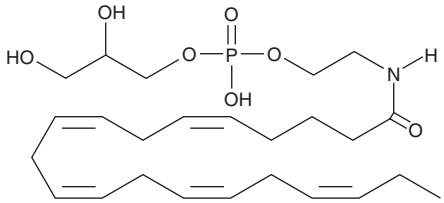
PRODUCT INFORMATION

Glycerophospho-N-Eicosapentaenoyl Ethanolamine

Item No. 90001842

Formal Name:	2,3-dihydroxypropyl (2-((5Z,8Z,11Z,14Z,17Z)-icosa-5,8,11,14,17-pentaenamido)ethyl) hydrogen phosphate
Synonym:	GP-NEPEA
MF:	$C_{25}H_{42}NO_7P$
FW:	499.6
Purity:	≥95%
UV/Vis.:	λ_{max}: 209 nm
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

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

GP-NEPEA is supplied as a crystalline solid. A stock solution may be made by dissolving the GP-NEPEA in the solvent of choice. GP-NEPEA is soluble in organic solvents such as DMSO and dimethyl formamide, which should be purged with an inert gas. The solubility of GP-NEPEA 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-NEPEA can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of GP-NEPEA 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 (NAEs) are naturally-occurring lipids that have diverse bioactivities. For example, arachidonoyl ethanolamide (Item No. 90050) is an endogenous neurotransmitter that evokes cellular responses by activating the cannabinoid (CB) receptors, central CB_1 and peripheral CB_2. The different types of NAEs are derived from glycerophospho-linked precursors by the activity of glycerophosphodiesterase 1.[1] GP-NEPEA is the metabolic precursor of eicosapentaenoyl ethanolamide (EPEA; Item No. 10964). EPEA is an NAE that inhibits dietary-restriction-induced lifespan extension in wild type and TOR pathway mutant nematodes.[2] EPEA also has anti-inflammatory properties, suppressing the expression of IL-6 and MCP-1 in 3T3-L1 adipocytes in response to lipopolysaccharide.[3]

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. Lucanic, M., Held, J.M., Vantipalli, M.C., *et al*. N-acylethanolamine signalling mediates the effect of diet on lifespan in *Caenorhabditis elegans*. *Nature* **473(7346)**, 226-9 (2011).
3. Balvers, M.G., Verhoeckx, K.C., Plastina, P., *et al*. Docosahexaenoic acid and eicosapentaenoic acid are

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