

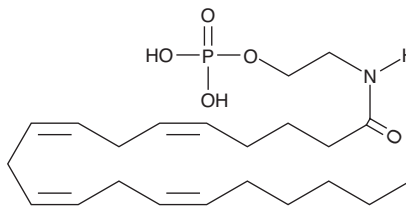
Product Information



Arachidonoyl Ethanolamide Phosphate

Catalog No. 10180

CAS Registry No.: 183323-26-4
Formal Name: N-(2-(phosphonoxy)ethyl)-5Z,8Z,11Z,14Z-eicosatetraenamide
Synonyms: AEA-P, Anandamide Phosphate
MF: C₂₂H₃₈NO₅P
FW: 427.5
Purity: ≥98%
Stability: ≥1 year at -20°C
Supplied as: A solution in ethanol



Laboratory Procedures

For long term storage, we suggest that arachidonoyl ethanolamide phosphate (AEA-P) be stored as supplied at -20°C. It will be stable for at least one year.

AEA-P is supplied as a solution in ethanol. To change the solvent, simply evaporate the ethanol under a gentle stream of nitrogen and immediately add the solvent of choice. Solvents such as DMSO and dimethyl formamide purged with an inert gas can be used. The solubility of AEA-P 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. If an organic solvent-free solution of AEA-P is needed, it can be prepared by evaporating the ethanol and directly dissolving the neat oil in aqueous buffers. The solubility of AEA-P in PBS (pH 7.2) is approximately 5 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Arachidonoyl ethanolamide (AEA) was the first endogenous cannabinoid (CB) to be isolated and characterized as an agonist acting on the same receptors (CB₁ and CB₂) as Δ⁹-THC.^{1,2} Since that time, a number of related endocannabinoids have been isolated, most notably 2-arachidonoyl glycerol (2-AG).² The phosphate ester of AEA, AEA-P, has been tested as a water soluble prodrug version of AEA in the treatment of C6 glioma cells *in vivo*. Here it acts with essentially the same potency as AEA.³ However, when tested for inhibition of AEA binding to isolated rat brain CB₁ receptors, AEA-P is about 5-fold less potent as an agonist with a K_i of about 200 nM.⁴ The phosphate esters of AEA and its analogs are also structural variants of lysophosphatidic acid (LPA). However, the effects of AEA-P on the various LPA receptors have not been tested.

References

1. 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).
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. Fowler, C.J., Jonsson, K.-O., Andersson, A., *et al.* Inhibition of C6 glioma cell proliferation by anandamide, 1-arachidonoylglycerol, and by a water soluble phosphate ester of anandamide: Variability in response and involvement of arachidonic acid. *Biochem. Pharmacol.* **66**, 757-767 (2003).
4. Sheskin, T., Hanus, L., Slager, J., *et al.* Structural requirements for binding of anandamide-type compounds to the brain cannabinoid receptor. *J. Med. Chem.* **40**, 659-667 (1997).

Related Products

Arachidonoyl Ethanolamide - Cat. No. 90050 • R-1 Methanandamide Phosphate - Cat. No. 10004281

WARNING: THIS PRODUCT IS NOT INTENDED OR APPROVED FOR HUMAN OR VETERINARY USE. USE OF THIS PRODUCT FOR HUMAN OR ANIMAL TESTING IS EXTREMELY HAZARDOUS AND MAY RESULT IN DISEASE, SEVERE INJURY, OR DEATH.

MATERIAL 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 Material Safety Data Sheet, which has been sent under separate cover to the MSDS supervisor at your institution.

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