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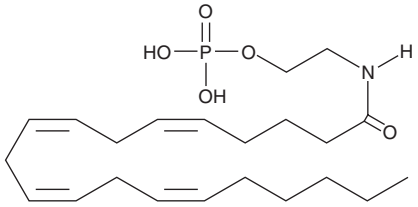
PRODUCT INFORMATION

Arachidonoyl Ethanolamide Phosphate

Item No. 10180

CAS Registry No.: 183323-26-4
Formal Name: N-(2-(phosphonooxy) ethyl)-5Z,8Z,11Z,14Z-eicosatetraenamide
Synonyms: AEA-P, Anandamide Phosphate
MF: $C_{22}H_{38}NO_5P$
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 should 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.

Description

Arachidonoyl ethanolamide (AEA; Item No. 90050) was the first endogenous cannabinoid (CB) to be isolated and characterized as an agonist acting on the same receptors (CB_1 and CB_2) as Δ^9-THC (Item No. 12068).[1,2] Since that time, a number of related endocannabinoids have been isolated, most notably 2-arachidonoyl glycerol (2-AG; Item No. 62160).[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 CB_1 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. Science* **258**, 1946-1949 (1992).
2. Felder, C.C., Briley, E.M., Axelrod, J., *et al. Proc. Natl. Acad. Sci. USA* **90**, 7656-7660 (1993).
3. Fowler, C.J., Jonsson, K.-O., Andersson, A., *et al. Biochem. Pharmacol.* **66**, 757-767 (2003).
4. Sheskin, T., Hanus, L., Slager, J., *et al. J. Med. Chem.* **40**, 659-667 (1997).

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