Arachidonoyl Ethanolamide
Item No. 90050

CAS Registry No.: 94421-68-8
Formal Name: N-(2-hydroxyethyl)-5Z,8Z,11Z,14Z-eicosatetraenamide
Synonyms: AEA, Anandamide
MF: C_{22}H_{37}NO_{2}
FW: 347.5
Purity: ≥98%
Supplied as: A solution in ethanol
Storage: -20°C
Stability: As supplied, 1 year from the QC date provided on the Certificate of Analysis, when stored properly

Special Conditions: Oxygen and light sensitive

Laboratory Procedures

Arachidonoyl ethanolamide (AEA) 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 or dimethyl formamide purged with an inert gas can be used. The solubility of AEA in these solvents is approximately 30 and 10 mg/ml, respectively.

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 is needed, it can be prepared by evaporating the AEA and directly dissolving the neat oil in aqueous buffers. The solubility of AEA in PBS, pH 7.2, is approximately 100 µg/ml. We do not recommend storing the aqueous solution for more than one day. AEA is a lipid soluble compound and therefore is not directly soluble in aqueous solutions. In cell culture studies, AEA is directly added as an ethanolic solution to the medium. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations.

Description

AEA is the ethanolamine amide of arachidonic acid, first isolated from porcine brain. AEA is an endogenous cannabinoid neurotransmitter that binds to both central cannabinoid (CB₁) and peripheral cannabinoid (CB₂) receptors. AEA inhibits the specific binding of [³H]-HU-243 to synaptosomal membranes (CB₁) with a Kᵢ value of 52 nM, compared to 46 nM for Δ⁹-THC. AEA shows much lower affinity for CB₂ (Kᵢ = 1,930 nM).

References