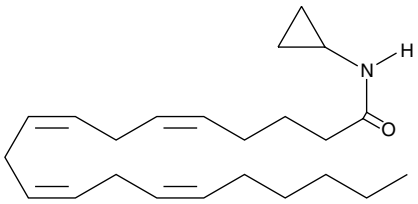
Product Information

Arachidonoyl Cyclopropamide

Item No. 91053

CAS Registry No.: 229021-64-1
Formal Name: N-cyclopropyl-5Z,8Z,11Z,14Z-eicosatetraenamide
Synonym: ACPA
MF: $C_{23}H_{37}NO$
FW: 343.6
Purity: ≥98%
Stability: ≥1 year at -20°C
Supplied as: A solution in ethanol



Laboratory Procedures

For long term storage, we suggest that arachidonoyl cyclopropylamide (ACPA) be stored as supplied at -20°C. It should be stable for at least one year.

ACPA 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 ethanol, DMSO, and dimethyl formamide purged with an inert gas can be used. The solubility of ACPA in these solvents is approximately 10 mg/ml.

ACPA is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, the ethanolic solution of ACPA should be diluted with the aqueous buffer of choice. ACPA has a solubility of approximately 1 mg/ml in a 1:1 solution of ethanol:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Arachidonoyl ethanolamide (AEA) was the first endogenous cannabinoid to be isolated and characterized as an agonist acting on the same receptors (CB_1 and CB_2) as tetrahydrocannabinols (THC).[1,2] ACPA is a potent, stable, and selective agonist analog of AEA. ACPA has an K_i value of 2.2 nM at the isolated rat CB_1 receptor, and is 325 times more potent at the CB_1 receptor compared with the CB_2 receptor.[3] In whole animal experiments, ACPA induces hypothermia in mice with the same efficacy as AEA, in spite of its much higher affinity for the CB_1 receptor. These data have been interpreted to indicate that ACPA may be a substrate for fatty acid amide hydrolase (FAAH), and thus only transiently available in whole animal experiments.[3]

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. Hillard, C.J., Manna, S., Greenberg, M.J., *et al.* Synthesis and characterization of potent and selective agonists of the neuronal cannabinoid receptor (CB_1). *J. Phar. Exp. Ther.* **289**, 1427-1433 (1999).

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