

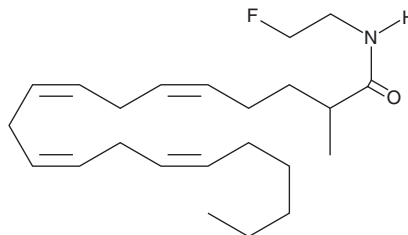
Product Information



(±)-2-Methyl Arachidonoyl-2'-Fluoroethylamide

Catalog No. 90055

CAS Registry No.	166100-39-6
Formal Name:	(±)-N-(2-fluoroethyl)-2-methyl-5Z,8Z,11Z,14Z-eicosatetraenamide
Synonyms:	2-Methyl-2'-fluoro AEA, 2-Methyl-2'-Anandamide, O-689
MF:	C ₂₃ H ₃₈ NOF
FW:	363.6
Purity:	≥95%
Stability:	≥2 years at -20°C
Supplied as:	A solution in ethanol



Laboratory Procedures

For long term storage, we suggest that (±)-2-methyl arachidonoyl-2'-fluoroethylamide (2-Methyl-2'-fluoro AEA) be stored as supplied at -20°C. It should be stable for at least two years.

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 2-Methyl-2'-fluoro AEA in these solvents is approximately 10 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 2-Methyl-2'-fluoro AEA is needed, it can be prepared by evaporating the ethanol and directly dissolving the neat oil in aqueous buffers. The solubility of 2-Methyl-2'-fluoro AEA in PBS (pH 7.2) is approximately 100 µg/ml. 2-Methyl-2'-fluoro AEA is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, the ethanolic solution of 2-Methyl-2'-fluoro AEA should be diluted with the aqueous buffer of choice. 2-Methyl-2'-fluoro AEA has a solubility of approximately 8.5 mg/ml in a 1:2 solution of ethanol:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

2-Methyl-2'-fluoro AEA is an analog of anandamide (AEA) in which the alcohol of the ethanolamide group has been removed and replaced with a fluorine atom. This substitution confers considerably increased binding affinity for the CB₁ receptor. It also confers additional selectivity, in that binding to CB₂ receptor is decreased relative to AEA.¹ However, the *in vivo* activity of 2-fluoro AEA is enhanced much less than the binding affinity, because the analog remains a good substrate for fatty acid amide hydrolase (FAAH) and is rapidly hydrolyzed by this enzyme. 2-Methyl-2'-fluoro AEA is further modified by the addition of an α-methyl group at the C-2 position of arachidonic acid. This substitution confers enhanced metabolic stability. 2-Methyl-2'-fluoro AEA can fully substitute for Δ⁹-THC in animal self-administration tests, whereas AEA itself and 2-fluoro AEA cannot.²

References

- Lin, S., Khanolkar, A.D., Fan, P., *et al.* Novel analogues of arachidonylethanolamide (anandamide): Affinities for the CB₁ and CB₂ cannabinoid receptors and metabolic stability. *J. Med. Chem.* **41**, 5353-5361 (1998).
- Ryan, W.J., Banner, K., Crocker, P.J., *et al.* Synthesis of (+)- and (-)-2-methylarachidonoyl-2'-fluoroethylamide (O-689). *Bioorg. med. Chem. Lett.* **7**, 2669-2672 (1997).

Related Products

Arachidonoyl Trifluoromethyl Ketone - Cat. No. 62120 • Arachidonoyl Ethanolamide - Cat. No. 90050 • Arvanil - Cat. No. 90052 • R-1 Methanandamide - Cat. No. 90070 • CB₁ Receptor Polyclonal Antibody - Cat. No. 101500 • CB₂ Receptor Polyclonal Antibody - Cat. No. 101550

WARNING: THIS PRODUCT IS NOT FOR HUMAN OR ANIMAL DISEASE DIAGNOSIS OR THERAPEUTIC DRUG USE.

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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