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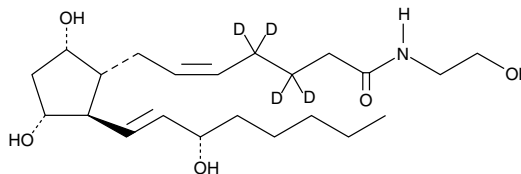
Product Information



Prostaglandin F_{2α} Ethanolamide-d₄

Item No. 316013

Formal Name: N-(2-hydroxyethyl)-9α,11α,15S-trihydroxy-prosta-5Z,13E-dien-1-amide-3,3,4,4-d₄
Synonyms: Dinoprost Ethanolamide-d₄, PGF_{2α}-EA-d₄
MF: C₂₂H₃₅D₄NO₅
FW: 401.6
Chemical Purity: ≥98% Prostaglandin F_{2α} Ethanolamide
Deuterium Incorporation: ≥99% deuterated forms (d₁-d₄); ≤1% d₀
Stability: ≥2 years at -20°C
Supplied as: A solution in methyl acetate



Laboratory Procedures

Prostaglandin F_{2α} Ethanolamide-d₄ (PGF_{2α}-EA-d₄) contains four deuterium atoms at the 3, 3', 4, and 4' positions. It is intended for use as an internal standard for the quantification of PGF_{2α}-EA by GC- or LC-mass spectrometry (MS). For long term storage, we suggest that PGF_{2α}-EA-d₄ be stored as supplied at -20°C. It will be stable for at least two years.

PGF_{2α}-EA-d₄ is supplied as a solution in methyl acetate. To change the solvent, simply evaporate the methyl acetate under a gentle stream of nitrogen and immediately add the solvent of choice. Solvents such as ethanol, DMSO and dimethyl formamide (DMF) purged with an inert gas can be used. The solubility of PGF_{2α}-EA-d₄ in DMSO is approximately 10 mg/ml, but it is miscible in ethanol and DMF.

PGF_{2α}-EA-d₄ is used as an internal standard for the quantification of PGF_{2α}-EA by stable isotope dilution MS. The accuracy of the sample weight in this vial is between 5% over and 2% under the amount shown on the vial. If better precision is required, the deuterated standard should be quantitated against a more precisely weighed unlabeled standard by constructing a standard curve of peak intensity ratios (deuterated *versus* unlabeled).

PGF_{2α}-EA is produced by COX-2 metabolism of the endogenous cannabinoid arachidonoyl ethanolamide (AEA) found in brain, liver, and other mammalian tissues.¹ AEA is metabolized by fatty acid amide hydrolase (FAAH) to give free arachidonic acid, which is the well known and conventional substrate for COX enzymes. However, AEA can be used directly by COX-2 to produce ethanolamide congeners of the classical prostaglandins, including PGE₂.² PGF_{2α}-EA has also been reported to be biosynthesized by this mechanism when AEA was infused into the lung and liver of living mice.³ PGF_{2α}-EA is a potent dilator (EC₅₀ = 58 nM) of the cat iris sphincter, which is a model system for testing potential intraocular hypotensive agents.³

References

1. Bachur, N.R., Masek, K., Melmon, K.L., *et al.* Fatty acid amides of ethanolamine in mammalian tissues. *J. Biol. Chem.* **240**, 1019-1024 (1965).
2. Yu, M., Ives, D., and Ramesha, C.S. Synthesis of prostaglandin E₂ ethanolamide from anandamide by cyclooxygenase-2. *J. Biol. Chem.* **272**, 21181-21186 (1997).
3. Woodward, D.F., Tang-Liu, D.D.-S., Madhu, C., *et al.* Prostaglandin F_{2α} (PGF_{2α}) 1-ethanolamide: A pharmacologically unique local hormone biosynthesized from anandamide, *in* 11th International Conference on Advances in Prostaglandin and Leukotriene Research: Basic Science and New Clinical Applications. Giovanni Lorenzini Medical Foundation, Houston, TX, 27 (2000).

Related Products

For a list of related products please visit: www.caymanchem.com/catalog/316013

WARNING: THIS PRODUCT IS FOR LABORATORY RESEARCH ONLY. NOT FOR ADMINISTRATION TO HUMANS. NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

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