

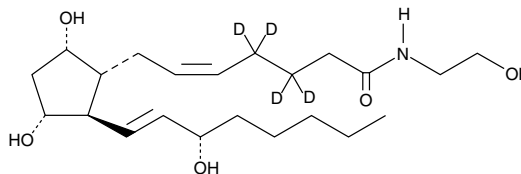
# Product Information



## Prostaglandin F<sub>2α</sub> Ethanolamide-d<sub>4</sub>

Item No. 316013

**Formal Name:** N-(2-hydroxyethyl)-9α,11α,15S-trihydroxy-prosta-5Z,13E-dien-1-amide-3,3,4,4-d<sub>4</sub>  
**Synonyms:** Dinoprost Ethanolamide-d<sub>4</sub>, PGF<sub>2α</sub>-EA-d<sub>4</sub>  
**MF:** C<sub>22</sub>H<sub>35</sub>D<sub>4</sub>NO<sub>5</sub>  
**FW:** 401.6  
**Chemical Purity:** ≥98% Prostaglandin F<sub>2α</sub> Ethanolamide  
**Deuterium Incorporation:** ≥99% deuterated forms (d<sub>1</sub>-d<sub>4</sub>); ≤1% d<sub>0</sub>  
**Stability:** ≥2 years at -20°C  
**Supplied as:** A solution in methyl acetate



### Laboratory Procedures

Prostaglandin F<sub>2α</sub> Ethanolamide-d<sub>4</sub> (PGF<sub>2α</sub>-EA-d<sub>4</sub>) 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<sub>2α</sub>-EA by GC- or LC-mass spectrometry (MS). For long term storage, we suggest that PGF<sub>2α</sub>-EA-d<sub>4</sub> be stored as supplied at -20°C. It will be stable for at least two years.

PGF<sub>2α</sub>-EA-d<sub>4</sub> 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<sub>2α</sub>-EA-d<sub>4</sub> in DMSO is approximately 10 mg/ml, but it is miscible in ethanol and DMF.

PGF<sub>2α</sub>-EA-d<sub>4</sub> is used as an internal standard for the quantification of PGF<sub>2α</sub>-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<sub>2α</sub>-EA is produced by COX-2 metabolism of the endogenous cannabinoid arachidonoyl ethanolamide (AEA) found in brain, liver, and other mammalian tissues.<sup>1</sup> 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 PGE<sub>2</sub>.<sup>2</sup> PGF<sub>2α</sub>-EA has also been reported to be biosynthesized by this mechanism when AEA was infused into the lung and liver of living mice.<sup>3</sup> PGF<sub>2α</sub>-EA is a potent dilator (EC<sub>50</sub> = 58 nM) of the cat iris sphincter, which is a model system for testing potential intraocular hypotensive agents.<sup>3</sup>

### 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 E<sub>2</sub> 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<sub>2α</sub> (PGF<sub>2α</sub>) 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](http://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

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 Safety Data Sheet, which has been sent via email to your institution.

#### WARRANTY AND LIMITATION OF REMEDY

Cayman Chemical Company makes **no warranty or guarantee** of any kind, whether written or oral, expressed or implied, including without limitation, any warranty of fitness for a particular purpose, suitability and merchantability, which extends beyond the description of the chemicals hereof. Cayman **warrants only** to the original customer that the material will **meet our specifications at the time of delivery.**

Cayman will carry out its delivery obligations with due care and skill. Thus, in no event will Cayman have **any obligation or liability**, whether in tort (including negligence) or in contract, for any direct, indirect, incidental or consequential damages, even if Cayman is informed about their possible existence.

This limitation of liability does not apply in the case of intentional acts or negligence of Cayman, its directors or its employees. Buyer's **exclusive remedy** and Cayman's sole liability hereunder shall be limited to a **refund** of the purchase price, or at Cayman's option, the **replacement**, at no cost to Buyer, of all material that does not meet our specifications.

Said refund or replacement is conditioned on Buyer giving written notice to Cayman within thirty (30) days after arrival of the material at its destination. Failure of Buyer to give said notice within thirty (30) days shall constitute a waiver by Buyer of all claims hereunder with respect to said material.

For further details, please refer to our **Warranty and Limitation of Remedy located on our website and in our catalog.**

Copyright Cayman Chemical Company, 07/10/2014

### Cayman Chemical

**Mailing address**  
1180 E. Ellsworth Road  
Ann Arbor, MI  
48108 USA

**Phone**  
(800) 364-9897  
(734) 971-3335

**Fax**  
(734) 971-3640

**E-Mail**  
custserv@caymanchem.com

**Web**  
[www.caymanchem.com](http://www.caymanchem.com)