

# Product Information



## 17-phenyl trinor Prostaglandin F<sub>2α</sub> ethyl amide-d<sub>4</sub>

Item No. 316820

**Formal Name:** N-ethyl-9α,11α,15S-trihydroxy-17-phenyl-18,19,20-trinor-prosta-5Z,13E-dien-1-amide-3,3,4,4-d<sub>4</sub>

**Synonyms:** Bimatoprost-d<sub>4</sub>, 17-phenyl trinor PGF<sub>2α</sub> ethyl amide-d<sub>4</sub>

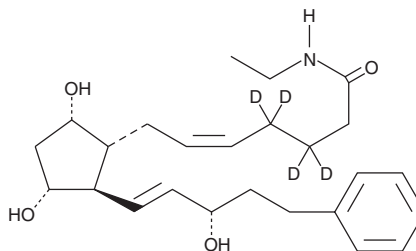
**MF:** C<sub>25</sub>H<sub>32</sub>D<sub>4</sub>NO<sub>4</sub>

**FW:** 418.6

**Purity:** ≥97%

**Stability:** ≥1 years at -20°C

**Supplied as:** A solution in methyl acetate



### Laboratory Procedures

17-phenyl trinor Prostaglandin F<sub>2α</sub> ethyl amide-d<sub>4</sub> (17-phenyl trinor PGF<sub>2α</sub> ethyl amide-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 17-phenyl trinor PGF<sub>2α</sub> ethyl amide by GC- or LC-mass spectrometry (MS). For long term storage, we suggest that 17-phenyl trinor PGF<sub>2α</sub> ethyl amide-d<sub>4</sub> be stored as supplied at -20°C. It should be stable for at least one year.

17-phenyl trinor PGF<sub>2α</sub> ethyl amide-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 purged with an inert gas can be used. The solubility of 17-phenyl trinor PGF<sub>2α</sub> ethyl amide-d<sub>4</sub> in these solvents is at least 25 mg/ml.

17-phenyl trinor PGF<sub>2α</sub> ethyl amide-d<sub>4</sub> is used as an internal standard for the quantification 17-phenyl trinor PGF<sub>2α</sub> ethyl amide 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 bimatoprost by constructing a standard curve of peak intensity ratios (deuterated versus unlabeled).

17-phenyl trinor PGF<sub>2α</sub> ethyl amide is sold under the Allergan trade name Bimatoprost and is a F-series PG analog which has been approved for use as an ocular hypotensive drug.<sup>1</sup> There is some controversy as to whether 17-phenyl trinor PGF<sub>2α</sub> N-ethyl amide is a prodrug analogous to prostaglandin ester prodrugs such as latanoprost. There is some evidence that unmetabolized 17-phenyl trinor PGF<sub>2α</sub> ethyl amide is a weak FP receptor agonist.<sup>2</sup> Investigations in our lab have shown that 17-phenyl trinor PGF<sub>2α</sub> ethyl amide is converted by an amidase enzymatic activity in the bovine and human cornea to yield the corresponding free acid, with a conversion rate of about 40 µg/g corneal tissue/24 hours.<sup>3</sup> The free acid, 17-phenyl trinor PGF<sub>2α</sub>, is a potent FP receptor agonist.<sup>4</sup> In human and animal models of glaucoma, FP receptor agonist activity corresponds very closely with intraocular hypotensive activity.

### References

1. Woodward, D.F., Krauss, A.H.-P., Chen, J., *et al. Survey of Ophthalmology* **45**, S337-S345 (2001).
2. Sharif, N.A., Williams, G.W., and Kelly, C.R. *Eur. J. Pharmacol.* **432**, 211-213 (2001).
3. Maxey, K.M., Johnson, J., Camras, C.B., *et al. Survey of Ophthalmology* **47(4)**, 34-40 (2002).
4. Abramovitz, M., Adam, M., Boie, Y., *et al. Biochim. Biophys. Acta* **1483**, 285-293 (2000).

### Related Products

17-phenyl trinor Prostaglandin F<sub>2α</sub> - Item No. 16810 • 15(R)-17-phenyl trinor Prostaglandin F<sub>2α</sub> - Item No. 16814 • 17-phenyl trinor Prostaglandin F<sub>2α</sub> ethyl amide - Item No. 16820 • 17-phenyl trinor Prostaglandin F<sub>2α</sub> amide - Item No. 16821 • 17-phenyl trinor Prostaglandin F<sub>2α</sub> diethyl amide - Item No. 16823 • 17-phenyl trinor Prostaglandin F<sub>2α</sub> isopropyl ester - Item No. 16824 • 15(R)-17-phenyl trinor Prostaglandin F<sub>2α</sub> isopropyl ester - Item No. 16825 • 17-phenyl trinor Prostaglandin F<sub>2α</sub>-d<sub>4</sub> - Item No. 316810 • 17-phenyl trinor Prostaglandin F<sub>2α</sub> ethyl amide EIA Kit - Item No. 516821 • 17-phenyl trinor Prostaglandin F<sub>2α</sub> ethyl amide EIA Kit (Solid Plate) - Item No. 516821.1 • 17-phenyl trinor Prostaglandin F<sub>2α</sub> serinol amide - Item No. 10004237 • 15(R)-17-phenyl trinor Prostaglandin F<sub>2α</sub> ethyl amide - Item No. 10008127 • 5-*trans*-17-phenyl trinor Prostaglandin F<sub>2α</sub> ethyl amide - Item No. 10008132 • 15-keto-17-phenyl trinor Prostaglandin F<sub>2α</sub> ethyl amide - Item No. 10010405 • 17-chlorophenyl trinor Prostaglandin F<sub>2α</sub> ethyl amide - Item No. 10010460 • 17-phenyl trinor Prostaglandin F<sub>2α</sub> cyclopropyl amide - Item No. 10010605 • 17-phenyl trinor Prostaglandin F<sub>2α</sub> cyclopropyl methyl amide - Item No. 10010810

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

### MATERIAL SAFETY DATA

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