

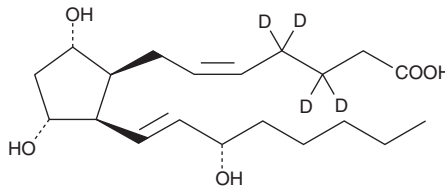
Product Information



8-*iso* Prostaglandin F_{2α}-d₄

Catalog No. 316350

CAS Registry No.:	211105-40-7
Formal Name:	9α,11α,15S-trihydroxy-(8β)-prosta-5Z,13E-dien-1-oic-3,3,4,4-d ₄ acid
Synonyms:	iPF _{2α} -III-d ₄ , 8-Isoprostane-d ₄ , 15-F _{2τ} -Isoprostane-d ₄ , 8- <i>epi</i> PGF _{2α} -d ₄
MF:	C ₂₀ H ₃₀ D ₄ O ₅
FW:	358.5
Chemical Purity:	≥98% 8- <i>iso</i> Prostaglandin F _{2α}
Deuterium Incorporation:	≥99% deuterated forms (d ₁ -d ₃); ≤1% d ₀
Stability:	≥2 years at -20°C
Supplied as:	A solution in methyl acetate



Laboratory Procedures

8-*iso* Prostaglandin F_{2α}-d₄ (8-*iso* PGF_{2α}-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 8-*iso* PGF_{2α} by GC- or LC-mass spectrometry (MS). For long term storage, we suggest that 8-*iso* PGF_{2α}-d₄ be stored as supplied at -20°C. It will be stable for at least two years.

8-*iso* PGF_{2α}-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, or dimethyl formamide purged with an inert gas can be used. The solubility of 8-*iso* PGF_{2α}-d₄ in these solvents is approximately 100 mg/ml.

8-*iso* PGF_{2α}-d₄ is used as an internal standard for the quantification 8-*iso* PGF_{2α} by stable isotope dilution MS. The accuracy of the sample weight in this vial is between 5% over and 2% under. If better precision is required, the deuterated standard should be quantitated against a more precisely weighed unlabeled standard 8-*iso* PGF_{2α} by constructing a standard curve of peak intensity ratios (deuterated *versus* unlabeled).

8-*iso* Prostaglandin F_{2α} (8-*iso* PGF_{2α}) is an isoprostane produced by the non-enzymatic peroxidation of arachidonic acid in membrane phospholipids.¹⁻³ It circulates in human plasma in two distinct forms - esterified in LDL phospholipids and as the free acid. The ratio of these two forms is approximately 2:1, with a total plasma 8-*iso* PGF_{2α} level of about 150 pg/ml in normal volunteers. In normal human urine, 8-*iso* PGF_{2α} levels are about 180-200 pg/mg of creatinine.^{1,2} 8-*iso* PGF_{2α} is a weak TP receptor agonist in vascular smooth muscle.⁴ Conversely, 8-*iso* PGF_{2α} inhibits platelet aggregation induced by U-46619 (10⁻⁶ M) and I-BOP (3 x 10⁻⁷ M) with IC₅₀ values of 1.6 x 10⁻⁶ M and 1.8 x 10⁻⁶ M, respectively.³

References

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- Morrow, J.D., Harris, T.M., Roberts, L.J., II. Noncyclooxygenase oxidative formation of a series of novel prostaglandins: Analytical ramifications for measurement of eicosanoids. *Anal. Biochem.* **184**, 1-10 (1990).
- Morrow, J.D., Minton, T.A., Roberts, L.J., II. The F₂-isoprostane, 8-*epi*-prostaglandin F_{2α}, a potent agonist of the vascular thromboxane/endoperoxide receptor, is a platelet thromboxane/endoperoxide receptor antagonist. *Prostaglandins* **44**, 155-163 (1992).
- Kiriyama, M., Ushikubi, F., Kobayashi, T., *et al.* Ligand binding specificities of the eight types and subtypes of the mouse prostanoid receptors expressed in Chinese hamster ovary cells. *Br. J. Pharmacol.* **122**, 217-224 (1997).

Related Products

8-*iso* Prostaglandin F_{2α} - Cat. No. 16350 • [³H]-8-*iso* Prostaglandin F_{2α} - Cat. No. 216350 • iPF_{2α}-IV-d₄ - Cat. No. 316230 • 8-*iso* Prostaglandin F_{2α}-17,18,19,20-d₄ - Cat. No. 316351 • 8-*iso* Prostaglandin F_{2α} Quant-PAK - Cat. No. 10007652 • Prostaglandin F_{2α}-d₅ - Cat. No. 10008643

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

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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