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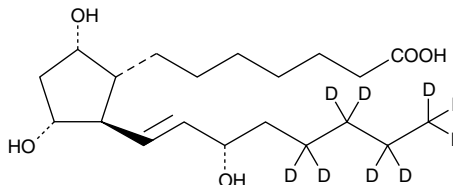
Product Information



Prostaglandin F_{1α}-d₉

Item No. 10008665

CAS Registry No.: 1542166-81-3
Formal Name: 9α,11α,15S-trihydroxy-prost-13E-en-1-oic-17,17,18,18,19,19,20,20-d₉ acid
Synonym: PGF_{1α}-d₉
MF: C₂₀H₂₇D₉O₅
FW: 365.6
Chemical Purity: ≥90%
Deuterium Incorporation: ≥99% deuterated forms (d₁-d₉); ≤1% d₀
Stability: ≥1 year at -20°C
Supplied as: A solution in methyl acetate



Laboratory Procedures

Prostaglandin F_{1α}-d₉ (PGF_{1α}-d₉) contains nine deuterium atoms at the 17, 17', 18, 18', 19, 19', 20, 20, and 20 positions. It is intended for use as an internal standard for the quantification of PGF_{1α} by GC- or LC-mass spectrometry (MS). For long term storage, we suggest that PGF_{1α}-d₉ be stored as supplied at -20°C. It should be stable for at least one year.

PGF_{1α}-d₉ 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 PGF_{1α}-d₉ in these solvents is approximately 50 mg/ml.

PGF_{1α}-d₉ is used as an internal standard for the quantification of PGF_{1α} 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_{1α} is the putative metabolite of dihomo-γ-linolenic acid (DGLA) *via* the cyclooxygenase (COX) pathway. Both PGF_{1α} and PGF_{2α} have been shown to act as priming pheromones for male Atlantic salmon with a threshold concentration of 10-11 M.¹ PGF_{1α} binds to the ovine corpus luteum FP receptor at only 8% of the relative potency of PGF_{2α}.² It is only half as active as PGF_{2α} in inducing human respiratory smooth muscle contractions *in vitro*.³

References

1. Moore, A. and Waring, C.P. Electrophysiological and endocrinological evidence that F-series prostaglandins function as priming pheromones in mature male Atlantic salmon (*Salmo salar*) PARR. *J. Exp. Biol.* **199**, 2307-2316 (1996).
2. Balapure, A.K., Rexroad, C.E., Jr., Kawada, K., *et al.* Structural requirements for prostaglandin analog interaction with the ovine corpus luteum prostaglandin F_{2α} receptor. *Biochem. Pharmacol.* **38**, 2375-2381 (1989).
3. Karim, S.M.M., Adaikan, P.G., and Kottagoda, S.R. Prostaglandins and human respiratory tract smooth muscle: Structure activity relationship. *Adv. Prostaglandin Thromboxane Res.* **7**, 969-980 (1980).

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