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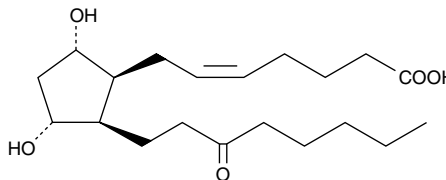
Product Information



8-*iso*-13,14-dihydro-15-keto Prostaglandin F_{2α}

Item No. 16380

CAS Registry No.: 191919-02-5
Formal Name: 9α,11α-dihydroxy-15-oxo-(8β)-prost-5Z-en-1-oic acid
Synonym: 8-*iso*-13,14-dihydro-15-keto PGF_{2α}
MF: C₂₀H₃₄O₅
FW: 354.5
Purity: ≥98%
Stability: ≥1 year at -20°C
Supplied as: A solution in methyl acetate



Laboratory Procedures

For long term storage, we suggest that 8-*iso*-13,14-dihydro-15-keto prostaglandin F_{2α} (8-*iso*-13,14-dihydro-15-keto PGF_{2α}) be stored as supplied at -20°C. It should be stable for at least one year.

8-*iso*-13,14-dihydro-15-keto PGF_{2α} 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*-13,14-dihydro-15-keto PGF_{2α} in these solvents is approximately 100 mg/ml.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. If an organic solvent-free aqueous solution of 8-*iso*-13,14-dihydro-15-keto PGF_{2α} is needed, it can be prepared by evaporating the methyl acetate and directly dissolving the neat oil in aqueous buffers. The solubility of 8-*iso*-13,14-dihydro-15-keto PGF_{2α} in PBS (pH 7.2) is approximately 10 mg/ml. For greater aqueous solubility, 8-*iso*-13,14-dihydro-15-keto PGF_{2α} can be directly dissolved in 10 mM Na₂CO₃ (6.5 mg/ml) and then diluted with PBS (pH 7.2) to achieve the desired concentration or pH. Store aqueous solutions of 8-*iso*-13,14-dihydro-15-keto PGF_{2α} on ice and use within 12 hours of preparation. Although the aqueous solutions of 8-*iso*-13,14-dihydro-15-keto PGF_{2α} may be stable for more than 12 hours, we strongly recommend using a fresh preparation each day.

8-*iso*-13,14-dihydro-15-keto PGF_{2α} is a metabolite of the isoprostane, 8-*iso* PGF_{2α} (8-isoprostane) in rabbits, monkeys, and humans.¹ 8-*iso* PGF_{2α} is a PG-like product of non-specific lipid peroxidation.² In both humans and monkeys, exogenously infused 8-isoprostane is converted primarily to metabolites having 2 or 4 carbon atoms removed from the top side chain by β-oxidation.¹ A similar pattern is observed when tritiated 8-isoprostane is infused into rabbits.³ Early in the infusion (within 10 minutes) 8-*iso*-13,14-dihydro-15-keto PGF_{2α} was a significant component of the metabolite profile, which was comprised mostly of dinor 8-isoprostane metabolites. 8-*iso*-13,14-dihydro-15-keto PGF_{2α} weakly inhibits the U-46619 or collagen-induced aggregation of human platelets. A number of the E-series isoprostanes are much more potent inhibitors of platelet aggregation than 8-*iso*-13,14-dihydro-15-keto PGF_{2α}.⁴

References

1. Chiabrando, C., Valagussa, A., Rivalta, C., *et al.* Identification and measurement of endogenous β-oxidation metabolites of 8-*epi*-prostaglandin F_{2α}. *J. Biol. Chem.* **274**, 1313-1319 (1999).
2. Morrow, J.D., Hill, K.E., Burk, R.F., *et al.* A series of prostaglandin F₂-like compounds are produced *in vivo* in humans by a non-cyclooxygenase, free radical-catalyzed mechanism. *Proc. Natl. Acad. Sci. USA* **87**, 9383-9387 (1990).
3. Basu, S. Metabolism of 8-*iso*-prostaglandin F_{2α}. *FEBS Lett.* **428**, 32-36 (1998).
4. Cranshaw, J.H., Evans, T.W., and Mitchell, J.A. Characterization of the effects of isoprostanes on platelet aggregation in human whole blood. *Br. J. Pharmacol.* **132**, 1699-1706 (2001).

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