

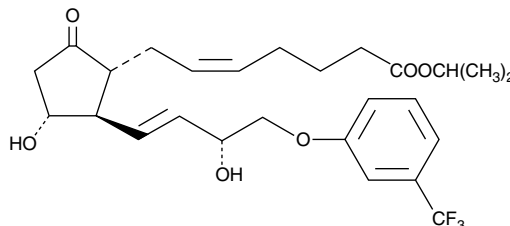
Product Information



9-keto Fluprostenol isopropyl ester

Item No. 16782

CAS Registry No.: 1219032-18-4
Formal Name: (+)-9-oxo-11 α ,15R-dihydroxy-16-(3-trifluoromethyl)phenoxy)-17,18,19,20-tetranor-prosta-5Z,13E-dien-1-oic acid, isopropyl ester
Synonym: Fluprostenol Prostaglandin E₂
MF: C₂₆H₃₃F₃O₆
FW: 498.5
Purity: \geq 98%
Stability: \geq 2 years at -20°C
Supplied as: A solution in ethanol
UV/Vis.: λ_{max} : 222, 277 nm



Laboratory Procedures

For long term storage, we suggest that 9-keto Fluprostenol isopropyl ester (9-keto Flu IE) be stored as supplied at -20°C. It should be stable for at least two years.

9-keto Flu IE is supplied as a solution in ethanol. To change the solvent, simply evaporate the ethanol under a gentle stream of nitrogen and immediately add the solvent of choice. Solvents such as DMSO and dimethyl formamide (DMF) purged with an inert gas can be used. The solubility of 9-keto Flu IE in these solvents is approximately 20 mg/ml. 9-keto Flu IE is stable for at least six months in these solvents if stored at -20°C.

9-keto Flu IE is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, 9-keto Flu IE should first be dissolved in DMF and then diluted with the aqueous buffer of choice. 9-keto Flu IE has a solubility of 500 μ g/ml in a 1:1 solution of DMF:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Fluprostenol is a well-studied, potent analog of PGE₂ and acts primarily through the FP receptor.¹ Oxidation at C-9 of Fluprostenol yields 9-keto-Fluprostenol. It is anticipated that this analog will have strong affinity for EP receptors and act as a PGE₂ agonist. However, no studies on the pharmacology of this compound have been published to date.

Prostaglandin esters are known to be hydrolyzed in the eye to the corresponding free acids.² However, the use of prostaglandin esters as prodrugs outside the eye is relatively unexplored. 9-keto Fluprostenol is an analog of PGE₂ with structural modifications intended to give it a prolonged half life and greater potency. 9-keto Fluprostenol isopropyl ester (9-keto Flu IE) has the potential to act as an EP agonist in prodrug form. In addition 9-keto Flu IE is a potential metabolite of Travoprost, which is the Alcon trade name for Fluprostenol isopropyl ester. In monkey cornea, this transformation was observed as a product of NADP⁺-dependent 15-hydroxy prostaglandin dehydrogenase when the closely related analog Latanoprost was used as substrate.³ Certain F-series prostaglandins have been shown to be converted to the corresponding E-series compounds in human liver and platelet preparations.⁴

References

1. Dukes, M., Russell, W., and Walpole, A.L. Potent luteolytic agents related to prostaglandin F_{2 α} . *Nature* **250**, 330-331 (1974).
2. Goh, Y. and Kishino, J. Pharmacological characterization of prostaglandin-related ocular hypotensive agents. *Jpn. J. Ophthalmol.* **38**, 236-245 (1994).
3. Fujimori, K., Okada, T., and Urade, Y. Expression and NADP⁺-dependent 15-hydroxyprostaglandin dehydrogenase mRNA in monkey ocular tissues and characterization of its recombinant enzyme. *J. Biochem.* **131**, 383-389 (2002).
4. Wong, P.Y.-K., Malik, K.U., Desiderio, D.M., *et al.* Hepatic metabolism of prostacyclin (PGI₂) in the rabbit: Formation of a potent novel inhibitor of platelet aggregation. *Biochem. Biophys. Res. Commun.* **93**, 486-494 (1980).

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