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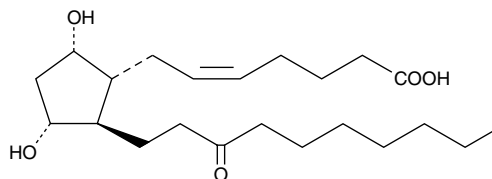
Product Information



Unoprostone

Item No. 16680

CAS Registry No: 120373-36-6
Formal Name: 9 α ,11 α -dihydroxy-13,14-dihydro-15-oxo-20a,20b-dihomoprost-5-en-1-oic acid
Synonym: 13,14-dihydro-15-keto-20-ethyl PGF_{2 α}
MF: C₂₂H₃₈O₅
FW: 382.5
Purity: \geq 98%
Stability: \geq 2 years at -20°C
Supplied as: A solution in methyl acetate



Laboratory Procedures

Unoprostone is an analog of prostaglandin F_{2 α} (PGF_{2 α}) with a 13,14-dihydro-15-keto modification and a two-carbon extension of the aliphatic lower side chain. The isopropyl ester of unoprostone (Rescula) has been approved for clinical use as an ocular hypotensive drug. For long term storage, we suggest that unoprostone be stored as supplied at -20°C. It will be stable for at least two years.

Unoprostone 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 unoprostone in these solvents is approximately 12 mg/ml. Unoprostone is stable for at least six months in these solvents if stored at -20°C.

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 solution of unoprostone is needed, it can be prepared by evaporating the methyl acetate and directly dissolving the neat oil in aqueous buffers. The solubility of unoprostone in PBS (pH 7.2) is approximately 90 μ g/ml. We do not recommend storing the aqueous solution for more than one day.

Both Latanoprost and Rescula have been approved for the treatment of ocular hypotension. Both analogs of PGF_{2 α} are believed to act by increasing the rate of aqueous humor outflow through the uveoscleral pathway.¹ Both drugs are believed to act as prodrugs, with endogenous esterases within the eye releasing the free acid active form of the drug. The typical dose of Rescula (one drop of 0.12% solution) is nearly 100 times that of Latanoprost.² Rescula has very little activity on isolated DP or TP receptors, less than 0.0005 the activity of PGE₂ on EP₃ receptors, and about 3% of the activity of PGF_{2 α} on FP receptors.³

References

1. Taniguchi, T., Haque, M.S.R., Sugiyama, K., et al. Ocular hypotensive mechanism of topical isopropyl unoprostone, a novel prostaglandin metabolite-related drug, in rabbits. *J. Ocul. Pharmacol.* **12**, 489-498 (1996).
2. Hara, M. and Spencer, C.M. *Unoprostone. Drugs Aging* **9**, 213-218 (1996).
3. Goh, Y. Pharmacological characterization of prostaglandin-related ocular hypotensive agents. *Jpn. J. Ophthalmol.* **38**, 236-245 (1994).

Related Products

For a list of related products please visit: www.caymanchem.com/catalog/16680

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

SAFETY DATA

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