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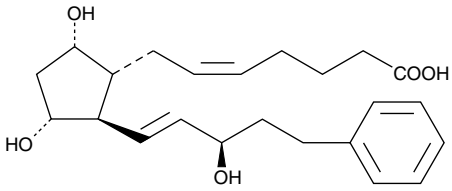
Product Information

15(R)-17-phenyl trinor Prostaglandin $F_{2\alpha}$

Item No. 16814

CAS Registry No.: 41639-71-8
Formal Name: 9α,11α,15R-trihydroxy-17-phenyl-18,19,20-trinor-prosta-5Z,13E-dien-1-oic acid
Synonyms: 15(R)-Bimatoprost (free acid), 15-epi Bimatoprost (free acid), 15(R)-17-phenyl trinor $PGF_{2\alpha}$
MF: $C_{23}H_{32}O_5$
FW: 388.5
Purity: ≥98%
Stability: ≥1 year at -20˚C
Supplied as: A solution in methyl acetate



Laboratory Procedures

For long term storage, we suggest that 15(R)-17-phenyl trinor prostaglandin $F_{2\alpha}$ (15(R)-17-phenyl trinor $PGF_{2\alpha}$) be stored as supplied at -20˚C. It should be stable for at least one year.

15(R)-17-phenyl trinor $PGF_{2\alpha}$ 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 15(R)-17-phenyl trinor $PGF_{2\alpha}$ in these solvents is approximately 30 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 solution of 15(R)-17-phenyl trinor $PGF_{2\alpha}$ is needed, it can be prepared by evaporating the methyl acetate and directly dissolving the neat oil in aqueous buffers. The solubility of 15(R)-17-phenyl trinor $PGF_{2\alpha}$ in PBS (pH 7.2) is approximately 1 mg/ml. We do not recommend storing the aqueous solution for more than one day.

17-phenyl trinor $PGF_{2\alpha}$ N-ethyl amide is an F-series PG analog which has been approved for use as an ocular hypotensive drug, sold under the Allergan trade name Bimatoprost.[1] Investigations in our lab have shown that 17-phenyl trinor $PGF_{2\alpha}$ ethyl amide is converted by an amidase enzymatic activity in the human cornea to yield the corresponding free acid, with a conversion rate of about 25 µg/cornea/24 hours.[2] The free acid, 17-phenyl trinor $PGF_{2\alpha}$, is a potent FP receptor agonist.[3] 15(R)-17-phenyl trinor $PGF_{2\alpha}$ is the 15-epi, or "unnatural" isomer of this active free acid metabolite. It has much diminished FP receptor-mediated activity, which is generally 1.5 to 2 logs less than the 15(S)-isomer.[4] In human and animal models of glaucoma, FP receptor agonist activity corresponds very closely with intraocular hypotensive activity.

References

1. Woodward, D.F., Krauss, A.H.-P., Chen, J., *et al. Survey of Ophthalmology* **45**, S337-S345 (2001).
2. Maxey, K.M., Johnson, J., Camras, C.B., *et al. Survey of Ophthalmology* **47**(4), 34-40 (2002).
3. Abramovitz, M., Adam, M., Boie, Y., *et al. Biochim. Biophys. Acta* **1483**, 285-293 (2000).
4. Resul, B., Stjernschantz, J., No, K., *et al. J. Med. Chem.* **36**, 243-248 (1993).

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