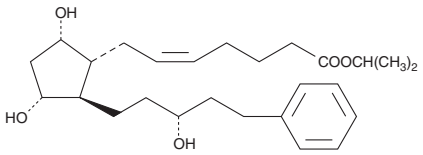
PRODUCT INFORMATION

Latanoprost

Item No. 16812

CAS Registry No.: 130209-82-4
Formal Name: 9α,11α,15R-trihydroxy-17-phenyl-18,19,20-trinor-prost-5Z-en-1-oic acid, isopropyl ester
Synonyms: CAY530500, (+)-Latanoprost, 17-phenyl-13,14-dihydro trinor $PGF_{2\alpha}$ isopropyl ester, 17-phenyl-13,14-dihydro trinor Prostaglandin $F_{2\alpha}$ isopropyl ester, PhXA41
MF: $C_{26}H_{40}O_5$
FW: 432.6
Purity: ≥98%
Supplied as: A solution in methyl acetate
Storage: -20°C
Stability: ≥2 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Latanoprost 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 DMSO, water, and dimethyl formamide purged with an inert gas can be used. The solubility of latanoprost in these solvents is approximately 50, 0.125, and 100 mg/ml, respectively. Latanoprost is also miscible in ethanol.

Latanoprost is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, the methyl acetate solution of latanoprost should be diluted with the aqueous buffer of choice. Latanoprost has a solubility of 0.4 mg/ml in a 1:1 solution of ethanol:PBS (pH 7.2) and 0.05 mg/ml in PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

Latanoprost is a derivative of prostaglandin $F_{2\alpha}$ ($PGF_{2\alpha}$; Item Nos. 16010 | 16020), an FP receptor agonist, and a prodrug of latanoprost (free acid) (Item No. 16811).[1] It induces phosphoinositide turnover in isolated human ciliary muscle and human trabecular meshwork cells, HEK293 cells expressing human ocular FP receptors, mouse NIH3T3 fibroblasts, and rat A7r5 vascular smooth muscle cells (EC_{50}s = 313, 564, 173, 142, and 110 nM, respectively). Topical ocular application of latanoprost (0.005% twice per day) reduces intraocular pressure (IOP), without affecting outflow facility or aqueous humor flow rates, in cynomolgus monkeys in a model of laser-induced glaucoma.[2] Formulations containing latanoprost have been used in the treatment of open-angle glaucoma or ocular hypertension.

References

1. Sharif, N.A., Kelly, C.R., Crider, J.Y., *et al.* Ocular hypotensive FP prostaglandin (PG) analogs: PG receptor subtype binding affinities and selectivities, and agonist potencies at FP and other PG receptors in cultured cells. *J. Ocul. Pharmacol. Ther.* **19(6)**, 501-515 (2003).
2. Serle, J.B., Podos, S.M., Kitazawa, Y., *et al.* A comparative study of latanoprost (Xalatan) and isopropyl unoprostone (Rescula) in normal and glaucomatous monkey eyes. *Jpn. J. Ophthalmol.* **42(2)**, 95-100 (1997).

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