

# PRODUCT INFORMATION



## Latanoprost-d<sub>4</sub> Item No. 10006556

**Formal Name:** 9 $\alpha$ ,11 $\alpha$ ,15R-trihydroxy-17-phenyl-18,19,20-trinor-prost-5Z-en-1-oic-3,3',4,4'-d<sub>4</sub> acid, isopropyl ester

**Synonyms:** (+)-Latanoprost-d<sub>4</sub>, PhXA41-d<sub>4</sub>, 17-phenyl-13,14-dihydro trinor Prostaglandin F<sub>2 $\alpha$</sub> -d<sub>4</sub> isopropyl ester

**MF:** C<sub>26</sub>H<sub>36</sub>D<sub>4</sub>O<sub>5</sub>

**FW:** 436.6

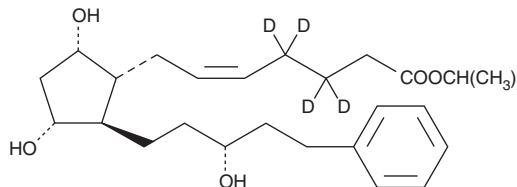
**Chemical Purity:**  $\geq 98\%$  (Latanoprost)

**Deuterium Incorporation:**  $\geq 99\%$  deuterated forms (d<sub>1</sub>-d<sub>4</sub>);  $\leq 1\%$  d<sub>0</sub>

**Supplied as:** A solution in methyl acetate

**Storage:** -20°C

**Stability:**  $\geq 2$  years



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

## Laboratory Procedures

Latanoprost-d<sub>4</sub> is intended for use as an internal standard for the quantification of latanoprost (Item No. 16812) by GC- or LC-MS. The accuracy of the sample weight in this vial is between 5% over and 2% under the amount shown on the vial. If better precision is required, the deuterated standard should be quantitated against a more precisely weighed unlabeled standard by constructing a standard curve of peak intensity ratios (deuterated *versus* unlabeled).

Latanoprost-d<sub>4</sub> 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 (DMF) purged with an inert gas can be used. The solubility of latanoprost-d<sub>4</sub> in ethanol and DMF is approximately 100 mg/ml and approximately 50 mg/ml in DMSO.

## Description

Latanoprost is a derivative of prostaglandin F<sub>2 $\alpha$</sub>  (PGF<sub>2 $\alpha$</sub> ; Item Nos. 16010 | 16020), an FP receptor agonist, and a prodrug of latanoprost (free acid) (Item No. 16811).<sup>1</sup> 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<sub>50</sub>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.<sup>2</sup> 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).

### WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

### SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

### WARRANTY AND LIMITATION OF REMEDY

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