

PRODUCT INFORMATION



Tafluprost (free acid)-d₄

Item No. 9002406

Formal Name: 9 α ,11 α -dihydroxy-15,15-difluoro-16-phenoxy-17,18,19,20-tetranor-prosta-5Z,13E-dien-1-oic-3',3',4',4'-d₄ acid

Synonym: AFP-172-d₄

MF: C₂₂H₂₄D₄F₂O₅

FW: 414.5

Chemical Purity: $\geq 98\%$ (Tafluprost (free acid))

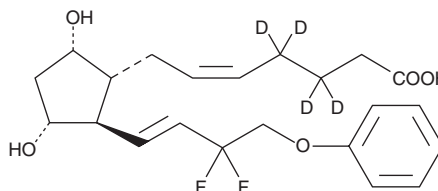
Deuterium Incorporation: $\geq 99\%$ deuterated forms (d₁-d₄); $\leq 1\%$ d₀

UV/Vis.: λ_{max} : 218, 269, 276 nm

Supplied as: A 1 mg/ml solution in methyl acetate

Storage: -20°C

Stability: ≥ 4 years



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

Laboratory Procedures

Tafluprost (free acid)-d₄ is intended for use as an internal standard for the quantification of tafluprost (free acid) (Item No. 10005439) 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).

Tafluprost (free acid)-d₄ 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 tafluprost (free acid)-d₄ in these solvents is approximately 30 mg/ml.

Description

Tafluprost (free acid) is an FP receptor agonist ($K_i = 4$ nM for the human receptor), a derivative of prostaglandin F_{2 α} (PGF_{2 α} ; Item Nos. 16010 | 16020), and an active metabolite of the prodrug tafluprost (Item No. 10005440).¹ It is formed from tafluprost by hydrolysis and is selective for the FP receptor over the dopamine receptor and PGE₂ receptor subtypes EP₁ and EP₂, as well as a panel of 32 neurological receptors and transporters, at 1 μ M. Tafluprost (free acid) induces constriction in isolated cat iris sphincters (EC₅₀ = 0.6 nM).² It also increases the proliferation and migration of, capillary formation by, and COX-2 levels in, human umbilical vein endothelial cells (HUVECs) when used at a concentration of 100 μ M.³

References

1. Takagi, Y., Nakajima, T., Shimazaki, A., *et al.* Pharmacological characteristics of AFP-168 (tafluprost), a new prostanoid FP receptor agonist, as an ocular hypotensive drug. *Exp. Eye Res.* **78**(4), 767-776 (2004).
2. Nakajima, T., Matsugi, T., Goto, W., *et al.* New fluoroprostaglandin F_{2 α} derivatives with prostanoid FP-receptor agonistic activity as potent ocular-hypotensive agents. *Biol. Pharm. Bull.* **26**(12), 1691-1695 (2003).
3. Roh, Y.J., Park, Y.G., Kang, S., *et al.* Effects of AFP-172 on COX-2-induced angiogenic activities on human umbilical vein endothelial cells. *Graefes Arch. Clin. Exp. Ophthalmol.* **250**(12), 1765-1775 (2012).

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.

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