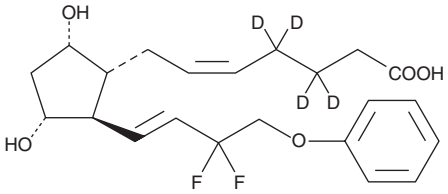
PRODUCT INFORMATION

Tafluprost (free acid)-d_4

Item No. 9002406

Formal Name:	9α,11α-dihydroxy-15,15-difluoro-16-phenoxy-17,18,19,20-tetranor-prosta-5Z,13E-dien-1-oic-3',3',4',4'-d_4 acid
Synonym:	AFP-172-d_4
MF:	$C_{22}H_{24}D_4F_2O_5$
FW:	414.5
Chemcial Purity:	≥98% (Tafluprost (free acid))
Deuterium Incorporation:	≥99% deuterated forms (d_1-d_4); ≤1% d_0
UV/Vis.:	λ_{max}: 218, 269, 276 nm
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

Tafluprost (free acid)-d_4 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)-d_4 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)-d_4 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 $F_{2\alpha}$ ($PGF_{2\alpha}$; 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 PGE_2 receptor subtypes EP_1 and EP_2, as well as a panel of 32 neurological receptors and transporters, at 1 µM. Tafluprost (free acid) induces constriction in isolated cat iris sphincters (EC_{50} = 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 µM.[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 F2α 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).

CAYMAN CHEMICAL
1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA
PHONE: [800] 364-9897
[734] 971-3335
FAX: [734] 971-3640
CUSTSERV@CAYMANCHEM.COM
WWW.CAYMANCHEM.COM