

Product Data Sheet

Product Name: Tafluprost-d4

Cat. No.: GC48123

Chemical Properties

Cas. No. N/A

SMILES O[C@@H](C[C@@H](O)[C@@H]1/C=C/C(F)(F)COC2=CC=CC=C2)[C@@H]1C/C=C\C([2H])([2H])C([2H])([2H])CC(OC(C)C)=O

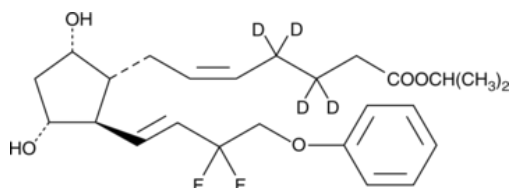
Formula C₂₅H₃₀D₄F₂O₅ M.Wt 456.6

Solubility DMF: 30 mg/ml, DMSO: 30 mg/ml, Ethanol: 30 mg/ml Storage Store at -20°C

General tips For obtaining a higher solubility, please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution: ship with blue ice. All other available size: ship with RT, or blue ice upon request.

Structure



Background

Tafluprost-d₄ contains four deuterium atoms at the 3', 3'', 4', and 4'' positions. It is intended for use as an internal standard for the quantification of tafluprost by GC- or LC-mass spectrometry. A number of 17-phenyl trinor prostaglandin F_{2α} derivatives have been approved for the treatment of glaucoma.^{1,2,3,4} Of these, the ones wherein the 13,14-double bond has been hydrogenated retain relatively good potency, but show a significantly reduced incidence of local irritant side effects.⁵ Alternatively, it was recently reported that analogs incorporating a 15-deoxy-15,15-difluoro modification also had a favorable ophthalmic activity profile.⁶ Tafluprost is a 2-series, 16-phenoxy analog of PGF_{2α} with the 15,15-difluoro substitution. Tafluprost free acid is a very potent FP receptor agonist, with a K_i value of 0.4 nM.⁶ The ester prodrug forms of tafluprost are also potent ocular hypotensives in monkeys.

Caution: Product has not been fully validated for medical applications. For research use only.

Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com

Address: 10292 Central Ave. #205, Montclair, CA, USA

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1. Woodward, D.F., Krauss, A.H.P., Chen, J., et al. The pharmacology of Bimatoprost (LumiganTM) Survey of Ophthalmology 45S337-S345(2001) 2. Abramovitz, M., Adam, M., Boie, Y., et al. The utilization of recombinant prostanoid receptors to determine the affinities and selectivities of prostaglandins and related analogs Biochim. Biophys. Acta 1483(2)285-293(2000) 3. Sorbera, L.A., and Castañer, J. Travoprost Drugs Future 25(1)41-45(2000) 4. Maxey, K.M., Johnson, J., Camras, C.B., et al. The hydrolysis of bimatoprost in corneal tissue generates a potent prostanoid FP receptor agonist Suv. Ophthalmol. 47(4)S34-S40(2002) 5. Resul, B., Stjernschantz, J., No, K., et al. Phenyl-substituted prostaglandins: Potent and selective antiglaucoma agents Journal of Medicinal Chemistry 36243-248(1993) 6. Nakajima, T., Matsugi, T., Goto, W., et al. New fluoroprostaglandin F2 α derivatives with prostanoid FP-receptor agonistic activity as potent ocular-hypotensive agents Biological and Pharmaceutical Bulletin 26(12)1691-1695(2003)

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