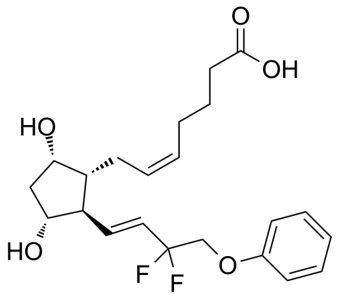
Tafluprost acid

Cat. No.:	HY-B0601
CAS No.:	209860-88-8
Molecular Formula:	$C_{22}H_{28}F_2O_5$
Molecular Weight:	410.45
Target:	Prostaglandin Receptor; Drug Metabolite
Pathway:	GPCR/G Protein; Metabolic Enzyme/Protease
Storage:	4°C, protect from light * In solvent : -80°C, 6 months; -20°C, 1 month (protect from light)



SOLVENT & SOLUBILITY

In Vitro

DMSO : 100 mg/mL (243.64 mM; Need ultrasonic)

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	1 mM	2.4364 mL	12.1818 mL	24.3635 mL
	5 mM	0.4873 mL	2.4364 mL	4.8727 mL
	10 mM	0.2436 mL	1.2182 mL	2.4364 mL

Please refer to the solubility information to select the appropriate solvent.

BIOLOGICAL ACTIVITY

Description

Tafluprost acid (AFP-172), an active metabolic form of Tafluprost, is a selective prostanoid FP receptor agonist. Tafluprost acid shows a high affinity for human prostanoid FP receptor with K_i and EC_{50} values of 0.4 nM and 0.53 nM, respectively. Tafluprost acid has 126 times weaker binding affinity for prostanoid EP3 receptor (IC_{50}=67 nM) than for the prostanoid FP receptor. Tafluprost acid can be used in the research of glaucoma[1][2][3].

IC_{50} & Target

Human FP Receptor 0.4 nM (Ki)	Human FP Receptor 0.53 nM (EC50)	EP3 67 nM (IC_{50})

In Vitro

Tafluprost acid (10, 100 nM, added on days 0 and 2) significantly inhibits adipogenesis in the early and late stages of differentiation of 3T3-L1 preadipocytes[2].

Tafluprost acid (100 nM, added on day 2 after initiating differentiation) suppresses adipogenesis in wild-type but not in FP knockout mouse primary adipocytes[2].

Tafluprost acid (10^{-4} M, 6 hours) stimulates the proliferation, migration of human umbilical vascular endothelial cells (HUVECs)[4].

Tafluprost acid (10^{-4} M, 4-18 hours) stimulates the tube formation of HUVECs[4].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- Nat Commun. 2023 May 9;14(1):2668.

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REFERENCES

[1]. Takagi Y, et al. Pharmacological characteristics of AFP-168 (tafluprost), a new prostanoid FP receptor agonist, as an ocular hypotensive drug. Exp Eye Res. 2004 Apr;78(4):767-76.

[2]. Taketani Y, et al. Activation of the prostanoid FP receptor inhibits adipogenesis leading to deepening of the upper eyelid sulcus in prostaglandin-associated periorbitopathy. Invest Ophthalmol Vis Sci. 2014 Mar 4;55(3):1269-76.

[3]. Roh YJ, et al. Effects of AFP-172 on COX-2-induced angiogenic activities on human umbilical vein endothelial cells. Graefes Arch Clin Exp Ophthalmol. 2012 Dec;250(12):1765-75.

[4]. Fuwa M, et al. Advantages of Efficacy and Safety of Fixed-Dose Tafluprost/Timolol Combination Over Fixed-Dose Latanoprost/Timolol Combination. PLoS One. 2016 Jul 6;11(7):e0158797.

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