Latanoprost acid

Cat. No.: HY-113756A

CAS No.: 41639-83-2

Molecular Formula: $C_{23}H_{34}O_5$

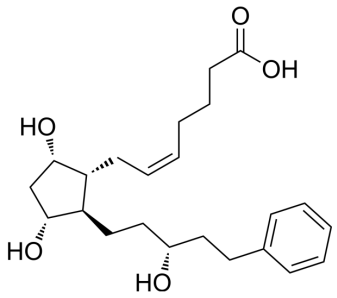
Molecular Weight: 390.51

Target: Prostaglandin Receptor

Pathway: GPCR/G Protein

Storage:

Pure form	-20°C	3 years
	4°C	2 years
In solvent	-80°C	6 months
	-20°C	1 month



SOLVENT & SOLUBILITY

In Vitro

DMSO : 100 mg/mL (256.08 mM; Need ultrasonic)

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	1 mM	2.5608 mL	12.8038 mL	25.6075 mL
	5 mM	0.5122 mL	2.5608 mL	5.1215 mL
	10 mM	0.2561 mL	1.2804 mL	2.5608 mL

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

In Vivo

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: 2.5 mg/mL (6.40 mM); Clear solution; Need ultrasonic
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: 2.5 mg/mL (6.40 mM); Clear solution; Need ultrasonic
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: 2.5 mg/mL (6.40 mM); Clear solution; Need ultrasonic

BIOLOGICAL ACTIVITY

Description

Latanoprost acid, an analog of prostaglandin (PG) F2α, is an selective prostanoid receptor (FP) agonist that specifically activates the FP-PG receptor[1]. Latanoprost acid inhibits RANKL-induced osteoclastgenesis and function by inhibiting ERK, AKT, JNK, and p38 cascade, following by the c-fos/NFATc1 pathway. Latanoprost acid is a medication which works to lower pressure inside the eyes[2].

IC_{50} & Target

FP

In Vitro

Latanoprost acid (10-20 μM;24 hours) reduces he protein expressions of c-fos and NFATc1[1].
Latanoprost acid (10μM with 50ng/ml RANKL) significantly inhibits ERK, p38, AKT and JNK[1].
Latanoprost acid (10 μM, 20 μM) significantly inhibits the mature osteoclast formation[1].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Western Blot Analysis[1]

Cell Line:	Bone marrow-derived macrophages cells (BMMs)
Concentration:	10 μM, 20 μM
Incubation Time:	24 hours
Result:	Reduced he protein expressions of c-fos and NFATc1.

In Vivo

Latanoprost acid (i.p.; 20 mg/kg; once a day for 7 days) notably prevents LPS-induced bone destruction at a dose of 20mg/kg [1].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	8-week-old C57BL/6J mice[1]
Dosage:	20 mg/kg
Administration:	Intraperitoneally injected; once a day for 7 days
Result:	Notably prevented LPS-induced bone destruction at a dose of 20mg/kg.

CUSTOMER VALIDATION

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

See more customer validations on www.MedChemExpress.com

REFERENCES

[1]. Weinreb RN, et al. Effects of prostaglandins on the aqueous humor outflow pathways. Surv Ophthalmol. 2002 Aug;47 Suppl 1:S53-64.

[2]. Xu X, et al. The prevention of latanoprost on osteoclastgenesis in vitro and lipopolysaccharide-induced murine calvaria osteolysis in vivo. J Cell Biochem. 2018 Jun;119(6):4680-4691.

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