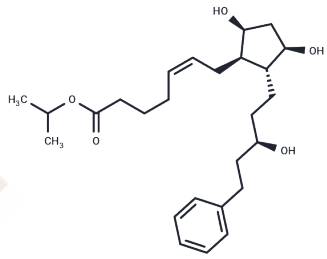
Data Sheet (Cat.No.T2528)

TargetMol

Latanoprost

Chemical Properties



CAS No. : 130209-82-4

Formula: C26H40O5

Molecular Weight: 432.59

Storage: Keep away from moisture,Store at low temperature
Pure form: -20°C for 3 years | In solvent: -80°C for 1 year
Actual storage temperature shall be subject to the COA.

Biological Description

Description	Latanoprost (Xalatan) is a prostaglandin F2alpha analogue and a prostanoid selective FP receptor agonist with an ocular hypertensive effect.
Targets(IC50)	RAR/RXR,GPCR,Prostaglandin Receptor
In vitro	Latanoprost functioned as both an indirect activator of AMP-activated protein kinase and a selective retinoid X receptor α (RXRα) antagonist able to selectively antagonise the transcription of a RXRα/peroxisome proliferator-activated receptor γ heterodimer[2]. Latanoprost induced morphological abnormality and viability decline of HCS cells in vitro. It induces cell cycle arrest of HCS cells. Latanoprost induces abnormal changes of plasma membrane, DNA fragmentation and ultrastructural abnormality of HCS cells. Caspase activation in HCS cells is also activated by Latanoprost treatment. Latanoprost induces MTP disruption and quantitative changes of mitochondrion-associated pro-apoptotic regulators in HCS cells[1]. Latanoprost is effective in inhibiting adipogenesis, reducing lipogenesis, promoting fatty acid oxidation and enhancing GLUT4 translocation and glucose uptake both in adipocytes and myotubes[2].
In vivo	Latanoprost, a clinical drug for treating primary open-angle glaucoma and intraocular hypertension, effectively ameliorates glucose and lipid disorders in two mouse models of type 2 diabetes. Its treatment improves glucose tolerance. Chronic administration of latanoprost decreases serum lipids and enhances insulin signalling in white adipose tissue and skeletal muscle. It effectually activates AMPK and regulates glucose and lipid metabolism-relevant genes in diabetic mice[2].
Cell Research	HCS cells were inoculated into a 24-well culture plate (Nunc) and cultured in 10% FBS-DMEM/F12 medium at 37°C in a humidified 5% CO2 incubator. After the cells grew into logarithmic phase, the culture medium of each culture plate well was replaced entirely with the medium containing latanoprost at concentrations varying from 50 mg/l to 0.78125 mg/l, respectively. The cells were cultured under the same condition as described earlier, and their morphology and growth status were monitored every 4 h under an Eclipse TS100 inverted microscope.(Only for Reference)

Solubility Information

Solubility	H2O: 125 mg/mL (288.96 mM) DMSO: 4.33 mg/mL (10.01 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+40% PEG300+5% Tween 80+45% Saline: 1 mg/mL (2.31 mM),Sonication is recommended. *Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.*

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.3117 mL	11.5583 mL	23.1166 mL
5 mM	0.4623 mL	2.3117 mL	4.6233 mL
10 mM	0.2312 mL	1.1558 mL	2.3117 mL
50 mM	0.0462 mL	0.2312 mL	0.4623 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

Shen JW, et al. Curr Eye Res. 2016, 17:1-8.
Wu S, Liu C, Tang J, et al.Tafluprost promotes axon regeneration after optic nerve crush via Zn2+-mTOR pathway. Neuropharmacology.2023: 109746.
Wang G, et al. Diabetologia. 2013, 56(12):2702-12.
Richard L. Hébert, et al. The journal of biological chemistry.