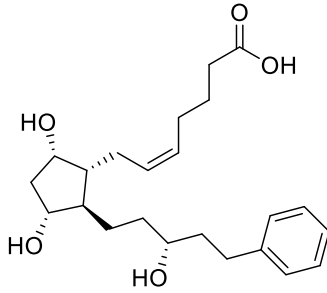


# Product data sheet



MedKoo Cat#: 330162 Name: Latanoprost acid CAS: 41639-83-2 (acid) Chemical Formula: C <sub>23</sub> H <sub>34</sub> O <sub>5</sub> Exact Mass: 390.2406 Molecular Weight: 390.52	
Product supplied as:	Powder
Purity (by HPLC):	≥ 98%
Shipping conditions	Ambient temperature
Storage conditions:	Powder: -20°C 3 years; 4°C 2 years. In solvent: -80°C 3 months; -20°C 2 weeks.

## 1. Product description:

Latanoprost acid is a potent FP receptor agonist with an EC<sub>50</sub> of 3.6 nM for human FP receptors, which is twice the potency of PGF<sub>2</sub>α. The efficacy of PG analog esters for the treatment of glaucoma correlates closely with the FP receptor binding affinity of the free acid. However, Lat-FA is more irritating and less effective than the prodrug latanoprost when applied directly to the eyes of human glaucoma patients. This product supplied as a solution in methyl acetate

## 2. CoA, QC data, SDS, and handling instruction

SDS and handling instruction, CoA with copies of QC data (NMR, HPLC and MS analytical spectra) can be downloaded from the product web page under “QC And Documents” section. Note: copies of analytical spectra may not be available if the product is being supplied by MedKoo partners. Whether the product was made by MedKoo or provided by its partners, the quality is 100% guaranteed.

## 3. Solubility data

Solvent	Max Conc. mg/mL	Max Conc. mM
TBD	TBD	TBD

## 4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	2.56 mL	12.80 mL	25.61 mL
5 mM	0.51 mL	2.56 mL	5.12 mL
10 mM	0.26 mL	1.28 mL	2.56 mL
50 mM	0.05 mL	0.26 mL	0.51 mL

## 5. Molarity Calculator, Reconstitution Calculator, Dilution Calculator

Please refer the product web page under section of “Calculator”

## 6. Recommended literature which reported protocols for in vitro and in vivo study

### In vitro study

1. Shen JW, Shan M, Peng YY, Fan TJ. Cytotoxic Effect of Latanoprost on Human Corneal Stromal Cells in vitro and its Possible Mechanisms. *Curr Eye Res.* 2017 Apr;42(4):534-541. doi: 10.1080/02713683.2016.1225770. Epub 2016 Oct 17. PMID: 27749098.

2. Smedowski A, Paterno JJ, Toropainen E, Sinha D, Wylegala E, Kaarniranta K. Excipients of preservative-free latanoprost induced inflammatory response and cytotoxicity in immortalized human HCE-2 corneal epithelial cells. *J Biochem Pharmacol Res.* 2014 Dec 1;2(4):175-184. PMID: 25530926; PMCID: PMC4270205.

### In vivo study

1. Świątkiewicz M, Welniak-Kamińska M, Fiedorowicz M, Kamińska A, Rejdak R, Grieb P. Peripheral Latanoprost Administration Lowers Intraocular Pressure in the Wistar Rat. *Ophthalmol Ther.* 2020 Sep;9(3):1-8. doi: 10.1007/s40123-020-00256-8. Epub 2020 Aug 5. PMID: 32383108; PMCID: PMC7406633.

2. Yang Y, Huang C, Lin X, Wu Y, Ouyang W, Tang L, Ye S, Wang Y, Li W, Zhang X, Liu Z. 0.005% Preservative-Free Latanoprost Induces Dry Eye-Like Ocular Surface Damage via Promotion of Inflammation in Mice. *Invest Ophthalmol Vis Sci.* 2018 Jul 2;59(8):3375-3384. doi: 10.1167/iovs.18-24013. PMID: 30025085.

# Product data sheet



## 7. Bioactivity

### Biological target:

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Latanoprost acid, an analog of prostaglandin (PG) F<sub>2α</sub>, is a selective prostanoid receptor (FP) agonist that specifically activates the FP-PG receptor.

### In vitro activity

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Latanoprost above concentrations of 3.125 mg/l can induce dose- and time-dependent morphological abnormality, growth retardation, viability decline, and plasma membrane permeability elevation of HCS cells. Moreover, latanoprost can arrest the cell cycle of these cells at S phase and induce PS externalization, DNA fragmentation, and apoptotic body formation of the cells. Furthermore, latanoprost can induce activation of caspase-3, -8 and -9; disruption of MTP; downregulation of anti-apoptotic Bcl-2; upregulation of pro-apoptotic Bax; and cytoplasmic cytochrome c release.

Reference: Curr Eye Res. 2017 Apr;42(4):534-541. <https://pubmed.ncbi.nlm.nih.gov/27749098/>

### In vivo activity

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Continuous subcutaneous infusion of latanoprost gradually decreased the IOP (intraocular pressure); the stable nadir of IOP, which was 20% lower than that prior to the start of infusion, was reached on day 3. Subcutaneous continuous delivery of latanoprost decreased the IOP in the conscious normotensive Wistar rats in this study.

Reference: Ophthalmol Ther. 2020 Sep;9(3):1-8. <https://pubmed.ncbi.nlm.nih.gov/32383108/>

*Note: The information listed here was extracted from literature. MedKoo has not independently retested and confirmed the accuracy of these methods. Customer should use it just for a reference only.*