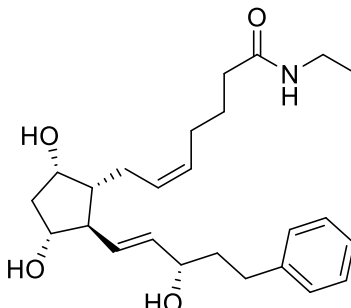


Product data sheet



MedKoo Cat#: 317326 Name: Bimatoprost CAS#: 155206-00-1 Chemical Formula: C ₂₅ H ₃₇ NO ₄ Exact Mass: 415.27226 Molecular Weight: 415.57		
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:

Bimatoprost, also known as AGN 192024, is a potent FP receptor agonist. Bimatoprost ophthalmic solution is a topical medication used for controlling the progression of glaucoma or ocular hypertension, by reducing intraocular pressure. It is a prostaglandin analogue that works by increasing the outflow of aqueous fluid from the eyes. It binds to the prostanoid FP receptor.

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
DMSO	68.0	163.63
Ethanol	83.0	199.73

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	2.41 mL	12.03 mL	24.06 mL
5 mM	0.48 mL	2.41 mL	4.81 mL
10 mM	0.24 mL	1.20 mL	2.41 mL
50 mM	0.05 mL	0.24 mL	0.48 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. Hariharan S, Minocha M, Mishra GP, Pal D, Krishna R, Mitra AK. Interaction of ocular hypotensive agents (PGF2 alpha analogs- bimatoprost, latanoprost, and travoprost) with MDR efflux pumps on the rabbit cornea. J Ocul Pharmacol Ther. 2009 Dec;25(6):487-98. doi: 10.1089/jop.2009.0049. PMID: 20028257; PMCID: PMC3096535.

In vivo study

1. Khidhir KG, Woodward DF, Farjo NP, Farjo BK, Tang ES, Wang JW, Picksley SM, Randall VA. The prostamide-related glaucoma therapy, bimatoprost, offers a novel approach for treating scalp alopecias. FASEB J. 2013 Feb;27(2):557-67. doi: 10.1096/fj.12-218156. Epub 2012 Oct 26. PMID: 23104985; PMCID: PMC3545535.

2. Sayed KM, Mostafa EM, Mounir A, Abd Elhaliem NG, Alsmman AH. Analysis of Bimatoprost-Induced changes on Rabbits eyelash Follicle: Clinical and Electron microscopic study. Clin Ophthalmol. 2019 Dec 5;13:2421-2426. doi: 10.2147/OPHTH.S229335. PMID: 31824136; PMCID: PMC6901034.

7. Bioactivity

Biological target:

Bimatoprost is a prostaglandin analog that targets prostaglandin receptors.

Product data sheet



In vitro activity

Table 1 provides a comprehensive overview of all possible interactions for prostaglandin analogs and their corresponding free acid forms with various efflux pumps studied. It was observed that the cellular accumulation of bimatoprost significantly elevated in the presence of GF120918 in MDCK-MDR1 but not in MDCK-BCRP cells. Interestingly, latanoprost and travoprost did not exhibit any statistically significant increase in their cellular accumulation with GF120918 in both MDCK-MDR1 and -BCRP cells. All three prostaglandin analogs, bimatoprost, latanoprost, and travoprost, showed significant interactions with all the isoforms of MRP studied, that is, MRP1, MRP2, and MRP5. On the other hand, free acid forms of bimatoprost, latanoprost, and travoprost did not produce statistically significant interactions in MDCK-MDR1 and -BCRP cells. However, these compounds interacted significantly with all isoforms of MRP (MRP1, MRP2, and MRP5). Table 2 summarizes the substrate specificities of all the prostaglandin analogs and their free acid forms with respect to P-gp, MRP1, MRP2, MRP5, and BCRP efflux pumps.

Reference: J Ocul Pharmacol Ther. 2009 Dec; 25(6): 487–498. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3096535/>

In vivo activity

In this study, topical bimatoprost once daily for one month showed thicker epidermis than in control eyes, indicating stimulation of skin cellular proliferation around the eyelash, this, together with the electron micrograph which showed heavily keratinized Henle's layer, indicate changes of active process of keratinization making the eyelash stronger and resistant to pulling out of the skin. Other studies reported eyelid tightening and shortening in the NZW rabbit especially after 6 months of bimatoprost use. Periocular skin pigmentation was also observed previously with bimatoprost but occurred after several months of use.

Reference: Clin Ophthalmol. 2019; 13: 2421–2426. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6901034/>

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.