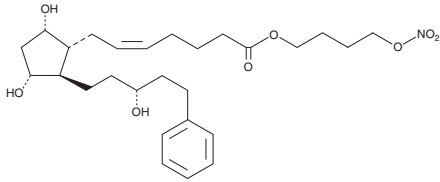


# Ophthalmology APIs

The natural compound prostaglandin  $F_{2\alpha}$  ( $PGF_{2\alpha}$ ) activates signaling pathways in the eye that reduce intraocular pressure (IOP). A family of  $PGF_{2\alpha}$  analogs, including bimatoprost, latanoprost, tafluprost, and travoprost, have been developed, and these compounds are more potent than  $PGF_{2\alpha}$  itself in lowering IOP and have fewer side effects. Moreover, they are known to be safe and effective when used in the treatment of glaucoma.

- US FDA and EMA compliant
- Analytical standards of impurities and degradation products available

## CGMP Latanoprostene Bunod



### Nomenclature

**Formal Name:** (5Z)-7-[(1R,2R,3R,5S)-3,5-dihydroxy-2-[(3R)-3-hydroxy-5-phenylpentyl]cyclopentyl]-5-heptenoic acid, 4-(nitrooxy)butyl ester

**CAS Number:** 860005-21-6

### Formula

**Molecular Formula:**  $C_{27}H_{41}NO_8$  · **Formula Weight:** 507.6

### Physiochemical Data

**Solubility:** Very soluble in acetone, ethanol, ethyl acetate, and chloroform

**Appearance:** Colorless to slightly yellow oil

**Optical Rotation:**  $[\alpha]_D^{20} = +27$  to  $+32^\circ$  (acetonitrile,  $c = 10$  mg/ml, 589 nm)

### Availability

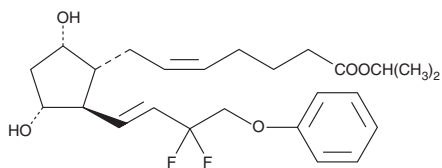
GMP material is available.



Cayman Pharma s.r.o.

Phone: (+420) 313 033 155  
GMP-API@caymanpharma.com

# CGMP Tafluprost



## Nomenclature

**Formal Name:** 15,15-difluoro-9 $\alpha$ ,11 $\alpha$ -dihydroxy-16-phenoxy-17,18,19,20-tetranor-prosta-5Z,13E-dien-1-oic acid, isopropyl ester

**CAS Number:** 209860-87-7

## Formula

**Molecular Formula:** C<sub>25</sub>H<sub>34</sub>F<sub>2</sub>O<sub>5</sub> · **Formula Weight:** 452.5

## Physiochemical Data

**Solubility:** Very soluble in acetone, acetonitrile, dichloromethane, diethylether, ethanol, methanol; practically insoluble in water and n-heptane

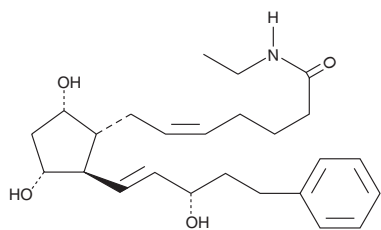
**Appearance:** Clear, colorless to slightly yellow oil

**Optical Rotation:**  $[\alpha]_D^{20} = +24.0^\circ$  to  $+29.0^\circ$  (CH<sub>3</sub>CN, c = 10 mg/ml)

## Availability

GMP material is available and the DMF for Tafluprost is available for customer review upon request. The DMF has been filed with the US FDA and in Russia.

# CGMP Bimatoprost



## Nomenclature

**Formal Name:** N-ethyl-9 $\alpha$ ,11 $\alpha$ ,15S-trihydroxy-17-phenyl-18,19,20-trinor-prosta-5Z, 13E-dien-1-amide

**CAS Number:** 155206-00-1

## Formula

**Molecular Formula:** C<sub>25</sub>H<sub>37</sub>NO<sub>4</sub> · **Formula Weight:** 415.6

## Physiochemical Data

**Solubility:** Very soluble in ethanol, methanol, dimethyl formamide, and DMSO; freely soluble in acetone; soluble in diethylene glycol; sparingly soluble in ethyl acetate; slightly soluble in water; insoluble in heptane

**Appearance:** White to slightly off-white crystalline powder

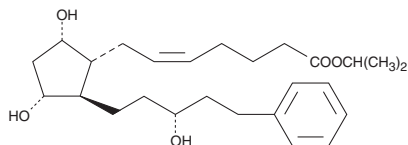
**Melting Point Range:** 70-72°C

**Optical Rotation:**  $[\alpha]_D^{20} = +31.0^\circ$  to  $+37.0^\circ$  (CH<sub>3</sub>CN, c = 1,589 nm)

## Availability

GMP material is available and the DMF for Bimatoprost is on file with the US FDA, Canada, and India.

# CGMP Latanoprost



## Nomenclature

**Formal Name:** 9 $\alpha$ ,11 $\alpha$ ,15R-trihydroxy-17-phenyl-18,19, 20-trinor-prost-5Z-en-1-oic acid, isopropyl ester

**CAS Number:** 130209-82-4

## Formula

**Molecular Formula:** C<sub>26</sub>H<sub>40</sub>O<sub>5</sub> · **Formula Weight:** 432.6

## Physiochemical Data

**Solubility:** Very soluble in ethanol, chloroform, acetonitrile, and DMSO; slightly soluble in water

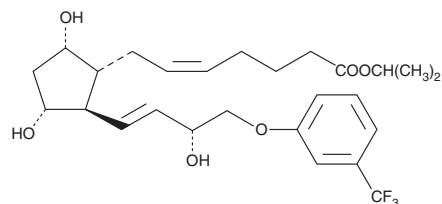
**Appearance:** Clear, thick, colorless to slightly yellow oil

**Optical Rotation:**  $[\alpha]_D^{20} = +32.0^\circ$  to  $+38.0^\circ$  (CH<sub>3</sub>CN, c = 0.91, 589 nm)

## Availability

GMP material which conforms to the USP and IP Monographs is available. The DMF is on file with the US FDA, Canada, India, in several EU member states, and in several other countries.

# CGMP Travoprost



## Nomenclature

**Formal Name:** (+)-9 $\alpha$ ,11 $\alpha$ ,15R-trihydroxy-16-(3-(trifluoromethyl)phenoxy)-17,18,19,20-tetranor-prosta-5Z, 13E-dien-1-oic acid, isopropyl ester

**CAS Number:** 157283-68-6

## Formula

**Molecular Formula:** C<sub>26</sub>H<sub>35</sub>F<sub>3</sub>O<sub>6</sub> · **Formula Weight:** 500.6

## Physiochemical Data

**Solubility:** Very soluble in ethanol, methanol, chloroform, dichloromethane, and acetonitrile; practically insoluble in water

**Appearance:** Clear, colorless to slightly yellow oil

**Optical Rotation:**  $[\alpha]_D^{20} = +14.6^\circ$  (CH<sub>2</sub>Cl<sub>2</sub>, c = 10 mg/ml)

## Availability

GMP material which conforms to the USP Monograph is available. The DMF is on file with the US FDA, Canada, India, Japan, China, in several EU member states, and in several other countries.