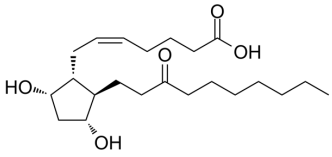
Unoprostone

Cat. No.:	HY-106916
CAS No.:	120373-36-6
Molecular Formula:	$C_{22}H_{38}O_5$
Molecular Weight:	382.53
Target:	Potassium Channel
Pathway:	Membrane Transporter/Ion Channel
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description

Unoprostone, a prostaglandin F2α analogs (PGAs), activates BK channels to reduce oxidative stress- and light-induced retinal cell death, and phagocytotic dysfunction. Unoprostone reduces intraocular pressure and is used topically for glaucoma or ocular hypertension[1].

In Vitro

Pretreatment with Unoprostone (0.01, 0.1, 1 μM; 1 h before H_2O_2 treatment) protects against H_2O_2-induced cell death in a concentration-dependent manner and the effect is significant at 0.1 μM and 1 μM concentrations[1].
Pretreatment with Unoprostone at concentrations of 0.1 to 3 μM protects against light-induced cell death in a concentration-dependent manner; the effect is significant at the 1 and 3 μM concentrations. Unoprostone reduces the morphological change, and it significantly inhibits the low mitochondrial membrane potential and cell death induced by light irradiation[1].
Unoprostone has prostaglandin $F_{2\alpha}$ receptors (FP) binding affinity with a K_i of 3.86 μM[2].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Cell Viability Assay[1]

Cell Line:	H_2O_2-induced photoreceptor cell
Concentration:	0.01, 0.1, 1 μM
Incubation Time:	1 hour before H_2O_2 treatment
Result:	Protected against H_2O_2-induced cell death in a concentration-dependent manner.

In Vivo

Unoprostone (0.06%, 0.12%; topical instillation; 3 μl) reduces mouse intraocular pressure (IOP) in a dose-dependent manner [3].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Male mice (6 weeks old)[3]
Dosage:	0.06%, 0.12%
Administration:	Topical instillation; 3 μl
Result:	Reduced mouse IOP in a dose-dependent manner.

REFERENCES

[1]. Tsuruma K, et al. Unoprostone reduces oxidative stress- and light-induced retinal cell death, and phagocytoticdysfunction, by activating BK channels. Mol Vis. 2011;17:3556-65. Epub 2011 Dec 30.

[2]. Kelly CR, et al. Real-time intracellular Ca2+ mobilization by travoprost acid, bimatoprost, unoprostone, and otheranalogs via endogenous mouse, rat, and cloned human FP prostaglandin receptors. J Pharmacol Exp Ther. 2003 Jan;304(1):238-45.

[3]. Ota T, et al. The effects of prostaglandin analogues on IOP in prostanoid FP-receptor-deficient mice. Invest Ophthalmol Vis Sci. 2005 Nov;46(11):4159-63.

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