Dinoprost tromethamine salt

Cat. No.: HY-12956A

CAS No.: 38562-01-5

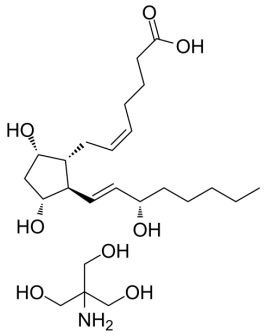
Molecular Formula: $C_{24}H_{45}NO_8$

Molecular Weight: 475.62

Target: Prostaglandin Receptor; Endogenous Metabolite; Autophagy; Apoptosis

Pathway: GPCR/G Protein; Metabolic Enzyme/Protease; Autophagy; Apoptosis

Storage: 4°C, sealed storage, away from moisture
* In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture)



SOLVENT & SOLUBILITY

In Vitro

H_2O : ≥ 100 mg/mL (210.25 mM)
DMSO : ≥ 100 mg/mL (210.25 mM)
* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	2.1025 mL	10.5126 mL	21.0252 mL
5 mM	0.4205 mL	2.1025 mL	4.2050 mL
10 mM	0.2103 mL	1.0513 mL	2.1025 mL

Please refer to the solubility information to select the appropriate solvent.

In Vivo

1. Add each solvent one by one: PBS
   Solubility: 50 mg/mL (105.13 mM); Clear solution; Need ultrasonic
2. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.5 mg/mL (5.26 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (5.26 mM); Clear solution
4. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (5.26 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Dinoprost tromethamine salt (Prostaglandin F2α tromethamine salt) is an orally active, potent prostaglandin F (PGF) receptor (FP receptor) agonist. Dinoprost tromethamine salt is a luteolytic hormone produced locally in the endometrial luminal epithelium and corpus luteum (CL). Dinoprost tromethamine salt plays a key role in the onset and progression of labour[1][2].

IC_{50} & Target	FP Receptor	Human Endogenous Metabolite

In Vitro

Dinoprost tromethamine salt (Prostaglandin F2α tromethamine salt; 1 μM; for 24 hours) induces ER stress, autophagy, and apoptosis in goat luteal cells[1].

Dinoprost tromethamine salt (1 μM; for 24 hours) significantly increases the expression of GRP78 and UPR sensors[1].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Apoptosis Analysis[1]

Cell Line:	Goat luteal cells
Concentration:	1 μM
Incubation Time:	For 24 hours
Result:	Significantly increased the apoptotic rate (15.62±3.12%).

Cell Autophagy Assay[1]

Cell Line:	Goat luteal cells
Concentration:	1 μM
Incubation Time:	For 24 hours
Result:	There was extensive overlap between LC3 and LAMP1 in luteal cells and autophagolysosomes were formed in goat luteal cells.

Western Blot Analysis[1]

Cell Line:	Goat luteal cells
Concentration:	1 μM
Incubation Time:	For 24 hours
Result:	The expression of GRP78 and UPR sensors including cleaved ATF6, phosphorylated-EIF2S1, EIF2S1, ATF4, phosphorylated-IRE1, autophagy-related protein LC3-II, and pro-apoptosis factor cleaved Caspase3 increased significantly in the cells.

CUSTOMER VALIDATION

- Nat Commun. 2023 May 9;14(1):2668.
- Int J Mol Sci. 2023 Apr 10, 24(8), 7012.

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REFERENCES

[1]. Hagen Thieme, et al. Endothelin antagonism: effects of FP receptor agonists prostaglandin F2alpha and fluprostenol on trabecular meshwork contractility. Invest Ophthalmol Vis Sci. 2006 Mar;47(3):938-45.

[2]. Xin Wen, et al. Prostaglandin F2α Induces Goat Corpus Luteum Regression via Endoplasmic Reticulum Stress and Autophagy. Front Physiol. 2020 Sep 11;11:868.

Caution: Product has not been fully validated for medical applications. For research use only.

Tel: 609-228-6898 Fax: 609-228-5909 E-mail: tech@MedChemExpress.com
Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA