# Prostaglandin D2

**Cat. No.:** HY-101988

**CAS No.:** 41598-07-6

**Molecular Formula:** $C_{20}H_{32}O_5$

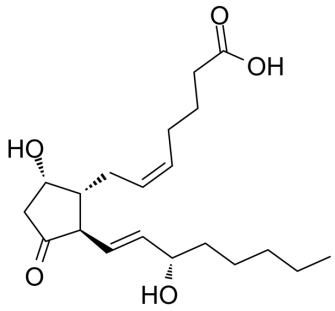
**Molecular Weight:** 352.47

**Target:** Endogenous Metabolite; Prostaglandin Receptor

**Pathway:** Metabolic Enzyme/Protease; GPCR/G Protein

**Storage:** -20°C, stored under nitrogen

* In solvent : -80°C, 6 months; -20°C, 1 month (stored under nitrogen)




## SOLVENT & SOLUBILITY

**In Vitro**

Ethanol : 75 mg/mL (212.78 mM; Need ultrasonic and warming)

DMSO : 50 mg/mL (141.86 mM; Need ultrasonic and warming)

**Preparing Stock Solutions**

| Solvent / Mass / Concentration | 1 mg | 5 mg | 10 mg |
|---|---|---|---|
| 1 mM | 2.8371 mL | 14.1856 mL | 28.3712 mL |
| 5 mM | 0.5674 mL | 2.8371 mL | 5.6742 mL |
| 10 mM | 0.2837 mL | 1.4186 mL | 2.8371 mL |

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

**In Vivo**

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.5 mg/mL (7.09 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (7.09 mM); Clear solution

## BIOLOGICAL ACTIVITY

**Description**

Prostaglandin D2 (PGD2) is one of the major PGs actively produced in the brain of various mammals[1]. Prostaglandin D2 is one of the most potent endogenous sleep promoting substances[2]. PGD2 plays a protective role by suppressing inflammation[3].

**$IC_{50}$ & Target**

Human Endogenous Metabolite

**In Vivo**

Prostaglandin D2 (PGD2; infused into the lateral ventricle; 5-50 pmol/min; for 6 hours between 20:00 and 2:00) induces sleep-wake profiles in A2AR KO mice[2].

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

| | |
|---|---|
| Animal Model: | Male WT and A2AR KO mice of the inbred C57BL/6 strain (weighing 23-27 g, 11-13 weeks old)[1] |
| Dosage: | 5, 10, 20, or 50 pmol/min |
| Administration: | Infused into the lateral ventricle; for 6 hours between 20:00 and 2:00 |
| Result: | Induced sleep-wake profiles. |

## REFERENCES


[1]. Suzuki F, et al. Transport of prostaglandin D2 into brain. Brain Res. 1986 Oct 22;385(2):321-8.

[2]. Zhang BJ, et al. Adenosine A2A receptor deficiency attenuates the somnogenic effect of prostaglandin D2 in mice. Acta Pharmacol Sin. 2017 Apr;38(4):469-476.

[3]. Kida T, et al. Prostaglandin D2 Attenuates NSC 125066-Induced Lung Inflammation and Pulmonary Fibrosis. PLoS One. 2016 Dec 19;11(12):e0167729.





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