Prostaglandin J2

Cat. No.: HY-113366

CAS No.: 60203-57-8

Molecular Formula: $C_{20}H_{30}O_4$

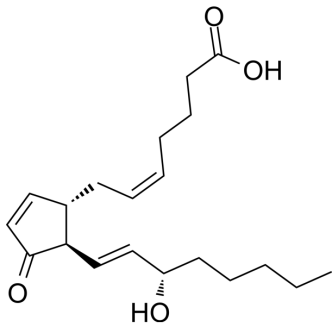
Molecular Weight: 334.45

Target: Endogenous Metabolite; Prostaglandin Receptor

Pathway: Metabolic Enzyme/Protease; GPCR/G Protein

Storage: -20°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

DMSO : 50 mg/mL (149.50 mM; Need ultrasonic and warming)

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	1 mM	2.9900 mL	14.9499 mL	29.8998 mL
	5 mM	0.5980 mL	2.9900 mL	5.9800 mL
	10 mM	0.2990 mL	1.4950 mL	2.9900 mL

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

BIOLOGICAL ACTIVITY

Description

Prostaglandin J2 (PGJ2), an endogenous metabolite of Prostaglandin D2 (PGD2; HY-101988), is a potent PGD2 receptor (DP) agonist with K_is of 0.9 nM and 6.6 nM for hDP and hCRTH2, respectively. Prostaglandin J2 stimulates intracellular cyclic AMP production with an EC_{50} value of 1.2 nM. Prostaglandin J2 induces oxidative stress and neuronal apoptosis. Prostaglandin J2 induces the accumulation/aggregation of ubiquitinated (Ub) proteins. Prostaglandin J2 is highly neurotoxic and potentially contributes to many neurodegenerative conditions, including Alzheimer's (AD) and Parkinson's diseases (PD)[1][2][3][4].

IC_{50} & Target

hDP 0.9 nM (Ki)	hCRTH2 6.6 nM (Ki)	hEP1 15.678 μM (Ki)	hEP2 989 nM (Ki)
hEP3 319 nM (Ki)	hEP4 1065 nM (Ki)	hFP 553 nM (Ki)	hIP >25 μM (Ki)
hTP 6426 nM (Ki)	Human Endogenous Metabolite		

In Vivo

Prostaglandin J2 (PGJ2; 33.4 μg/injection; unilateral injection to the SNpc; once per week for 2 or 4 weeks) induces

progressive PD-like pathology and exhibites microglia and astrocyte activation and motor deficits in the rats[4].

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

Animal Model:	Sixteen-week-old Sprague Dawley male rats[4]
Dosage:	33.4 μg/injection
Administration:	Unilateral (right side) injections to the SNpc; once per week for 2 or 4 weeks
Result:	Induced progressive dopaminergic neuronal loss in the rat substantia nigra pars compacta (SNpc). Developed parkinsonian-like motor deficits in a progressive manner.

REFERENCES

[1]. D H Wright, et al. Characterization of the recombinant human prostanoid DP receptor and identification of L-644,698, a novel selective DP agonist. Br J Pharmacol. 1998 Apr;123(7):1317-24.

[2]. Nicole Sawyer, et al. Molecular pharmacology of the human prostaglandin D2 receptor, CRTH2. Br J Pharmacol. 2002 Dec;137(8):1163-72.

[3]. Maria E Figueiredo-Pereira, et al. Prostaglandin J2: a potential target for halting inflammation-induced neurodegeneration. Ann N Y Acad Sci. 2016 Jan;1363(1):125-37.

[4]. Chuhyon Corwin, et al. Prostaglandin D2/J2 signaling pathway in a rat model of neuroinflammation displaying progressive parkinsonian-like pathology: potential novel therapeutic targets. J Neuroinflammation. 2018 Sep 20;15(1):272.

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