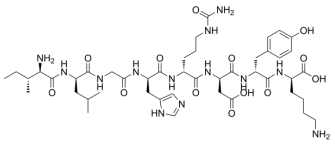
PDC31

Cat. No.:	HY-P4160
CAS No.:	634586-40-6
Molecular Formula:	$C_{45}H_{71}N_{13}O_{13}$
Molecular Weight:	1002.12
Sequence:	d-(Ile-Leu-Gly-His-Cit-Asp-Tyr-Lys)
Sequence Shortening:	d-(ILGHXDYK)
Target:	Prostaglandin Receptor
Pathway:	GPCR/G Protein
Storage:	Sealed storage, away from moisture and light, under nitrogen Powder -80°C 2 years -20°C 1 year * In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture and light, under nitrogen)



SOLVENT & SOLUBILITY

In Vitro

H_2O : 100 mg/mL (99.79 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	0.9979 mL	4.9894 mL	9.9788 mL
	5 mM	0.1996 mL	0.9979 mL	1.9958 mL
	10 mM	0.0998 mL	0.4989 mL	0.9979 mL

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

BIOLOGICAL ACTIVITY

Description

PDC31 (THG113.31; ILGHXDYK) is an allosteric and non-competitive inhibitor of FP Prostaglandin Receptor. PDC31 is the D-amino acid-based oligopeptide, is used for smooth muscle contractile agent. PDC31 decreases the strength and duration of uterine contractions in vivo, which can be used for research of preterm labor and primary dysmenorrhea (PD). PDC31 also enhances Ca^{2+}-dependent large-conductance K^+-channel in human myometrial cells[1][2].

IC_{50} & Target		
	FP Receptor ~30 nM (Ki)	$PGF_{2\alpha}$

In Vitro

PDC31 (10 μM, 50 μM;) stimulates the BK_{Ca} channel in human myometrial smooth muscle cells, and enhances open state channel activity with average 4 and 6-fold by 10 and 50 μM, respectively[2].

PDC31 (1 nM-10 μM; 20 min intervals) cumulatively inhibits spontaneous contractions in isolated pregnant human myometrium[2].

PDC31 consists of ILGHXDYK, associated sequence is based on a transmembrane domain of the human PGF2a receptor[3]. PDC31 has been shown to reduce the duration and strength of PGF2a-induced contractions in myometrial strip models and to delay delivery in animal models of preterm labor[4].

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

REFERENCES

[1]. Sharif NA, et al. Prostaglandin FP receptor antagonists: discovery, pharmacological characterization and therapeutic utility. Br J Pharmacol. 2019 Apr;176(8):1059-1078.

[2]. Doheny HC, et al. THG113.31, a specific PGF2alpha receptor antagonist, induces human myometrial relaxation and BKCa channel activation. Reprod Biol Endocrinol. 2007 Mar 16;5:10.

[3]. Friel AM, et al. Specific PGF(2alpha) receptor (FP) antagonism and human uterine contractility in vitro. BJOG. 2005 Aug;112(8):1034-42.

[4]. Böttcher B, et al. A first-in-human study of PDC31 (prostaglandin F2α receptor inhibitor) in primary dysmenorrhea. Hum Reprod. 2014 Nov;29(11):2465-73.

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