(2R/S)-6-PNG

Cat. No.: HY-115681

CAS No.: 68682-01-9

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

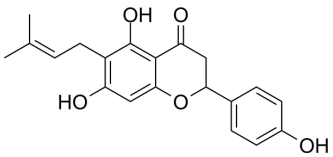
Molecular Weight: 340

Target: Calcium Channel

Pathway: Membrane Transporter/Ion Channel; Neuronal Signaling

Storage:

Powder	-20°C	3 years
In solvent	-80°C	6 months
	-20°C	1 month



SOLVENT & SOLUBILITY

In Vitro

DMSO : 125 mg/mL (367.65 mM; Need ultrasonic)

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	1 mM	2.9412 mL	14.7059 mL	29.4118 mL
	5 mM	0.5882 mL	2.9412 mL	5.8824 mL
	10 mM	0.2941 mL	1.4706 mL	2.9412 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: ≥ 2.08 mg/mL (6.12 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.08 mg/mL (6.12 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.08 mg/mL (6.12 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

(2R/S)-6-PNG (6-Prenylnaringenin) is a potent and reversible $Ca_V3.2$ T-type Ca^{2+} channels (T-channels) blocker. (2R/S)-6-PNG can penetrate the blood-brain barrier (BBB). (2R/S)-6-PNG suppresses neuropathic and visceral pain in mice[1].

IC_{50} & Target

T-type calcium channel

In Vitro

(2R/S)-6-PNG (6-Prenylnaringenin) potently blocks $Ca_V3.2$, but exhibits minor effect on high-voltage-activated Ca^{2+} channels and voltage-gated Na^+ channels in differentiated NG108-15 cells[1].
On the basis of IC50 values, the proportion ($Ca_V3.2$/HVA) of the inhibition potency of (2R/S)-6-PNG on $Ca_V3.2$ and HVA-

	currents is 5.20, and that ($Ca_V3.2/Na_V$) on $Ca_V3.2$ and Na_V-currents is 3.54[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	(2R/S)-6-PNG (6-Prenylnaringenin; 10-30 mg/kg; i.p.; single dose; 15 min before Na2S) significantly reduced the Na_2S-induced nociceptive behavior and/or referred hyperalgesia in onscious mice with intracolonic (i.col.) administration of Na_2S, an H_2S donor[1]. (2R/S)-6-PNG (30 mg/kg; i.p.) prevents the increased number of phosphorylated ERK-positive cells following i.col. Na2S in laminae I-II, V-VI and X to which the primary afferent neurons project, and the Na2S-induced increase in the phosphorylated ERK-positive cell number[1]. (2R/S)-6-PNG (0.01-1 and 0.1-10 nmol/paw; intraplantar administration) restores the mechanical allodynia induced by partial sciatic nerve ligation (PSNL) and by i.p. administration of Oxaliplatin (OHP) a, respectively, in a dose-dependent manner[1]. (2R/S)-6-PNG (20-30 mg/kg; i.p.) significantly reverses the PSNL-induced allodynia. (2R/S)-6-PNG (10-20 mg/kg; i.p.) significantly reverses the OHP-induced allodynia (5 mg/kg; i.p.; single dose)[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

[1]. Fumiko Sekiguchi, et al. Blockade of T-type calcium channels by 6-prenylnaringenin, a hop component, alleviates neuropathic and visceral pain in mice. Neuropharmacology

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