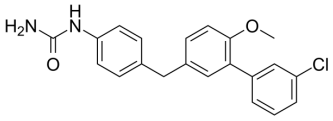
D159687

Cat. No.:	HY-15444
CAS No.:	1155877-97-6
Molecular Formula:	$C_{21}H_{19}ClN_2O_2$
Molecular Weight:	366.84
Target:	Phosphodiesterase (PDE)
Pathway:	Metabolic Enzyme/Protease
Storage:	Powder -20°C 3 years 4°C 2 years In solvent -80°C 2 years -20°C 1 year



SOLVENT & SOLUBILITY

In Vitro

DMSO : 150 mg/mL (408.90 mM; Need ultrasonic)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	2.7260 mL	13.6299 mL	27.2598 mL
5 mM	0.5452 mL	2.7260 mL	5.4520 mL
10 mM	0.2726 mL	1.3630 mL	2.7260 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 (6.81 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (6.81 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (6.81 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

D159687 is a selective PDE4D inhibitor[1].

IC_{50} & Target

PDE4D[1]

In Vitro

D159687 (1 μM, 0-24 hours) induces a transient increase in CREB phosphorylation which peaked at 6 hours after treatment[1].

D159687 (0.01-1 μM, 6 hours) causes optimal CREB phosphorylation at 1 μM[1].

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

Western Blot Analysis[1]

Cell Line:	HT-22 (mouse hippocampal cell line)
Concentration:	1 μM
Incubation Time:	0, 1, 3, 6, 12, 24 hours
Result:	Induced a transient increase in CREB phosphorylation which peaked at 6 hours after treatment.

Western Blot Analysis[1]

Cell Line:	HT-22 (mouse hippocampal cell line)
Concentration:	0.01 μM, 0.1 μM, 1 μM
Incubation Time:	6 hours
Result:	CREB phosphorylation was optimal at 1 μM.

In Vivo

D159687 (0.05-5 mg/kg; oral daily for a week) shows a potential recruitment or enhancement of synaptic function with increased task difficulty in female Cynomolgus macaques[2].

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

Animal Model:	Female Cynomolgus macaques (4–6 year old) [2]
Dosage:	0.05, 0.5, 5 mg/kg
Administration:	Oral daily for a week
Result:	A potential recruitment or enhancement of synaptic function with increased task difficulty.

REFERENCES

[1]. Zhang C, et al. Comparison of the Pharmacological Profiles of Selective PDE4B and PDE4D Inhibitors in the Central Nervous System. Sci Rep. 2017 Jan 5;7:40115.

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