MIF-1 TFA

Cat. No.: HY-107663A

CAS No.: 35240-69-8

Molecular Formula: $C_{15}H_{25}F_3N_4O_5$

Molecular Weight: 398.38

Target: Dopamine Receptor

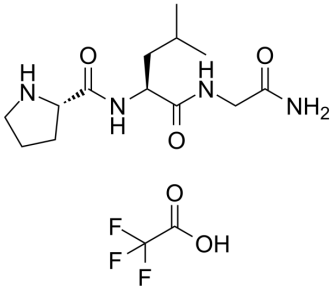
Pathway: GPCR/G Protein; Neuronal Signaling

Storage: Sealed storage, away from moisture and light

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)



SOLVENT & SOLUBILITY

In Vitro

DMSO : 125 mg/mL (313.77 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	2.5102 mL	12.5508 mL	25.1017 mL
	5 mM	0.5020 mL	2.5102 mL	5.0203 mL
	10 mM	0.2510 mL	1.2551 mL	2.5102 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 (5.22 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.08 mg/mL (5.22 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.08 mg/mL (5.22 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

MIF-1 TFA (Melanostatin), an endogenous brain peptide, is a potent dopamine receptor allosteric modulator. MIF-1 TFA inhibits melanin formation. MIF-1 TFA blocks the effects of opioid receptor activation to modulate the analgesic effects. MIF-1 TFA accesses from the blood to the CNS by directly crossing the blood-brain barrier (BBB)[1][2][3].

In Vitro

MIF-1 TFA (Melanostatin, 1 μM) provokes a reversible hyperpolarization and a suppression of spontaneous action potentials [2].

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

In Vivo

MIF-1 TFA (Melanostatin, 1 mg/kg; i.p.; once, for 1 hour; male Wistar rats) modulates the analgesic effects, including stress-induced analgesia (SIA)[1].

MIF-1 TFA (Melanostatin, 1 mg/kg; i.p.; daily, for 8 weeks; Sprague-Dawley rats) attenuates spiroperidol-induced impairment of development of striatal dopamine D2 receptors in rats[3].

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

Animal Model:	Male Wistar rats[1]
Dosage:	1 mg/kg
Administration:	Intraperitoneal injection; once, for 1 hour
Result:	Decreased the analgesic effect. Increased the pain threshold for at least 1 h.

Animal Model:	Sprague-Dawley rats[3]
Dosage:	1 mg/kg
Administration:	Intraperitoneal injection; daily, for 8 weeks
Result:	Attenuated the ontogenic impairment of striatal D2 receptors that was produced by spiroperidol (HY-B1371) treatment.

REFERENCES

[1]. Bocheva A, et, al. Antiopioid properties of the TYR-MIF-1 family. Methods Find Exp Clin Pharmacol. 2004 Nov;26(9):673-7.

[2]. Valentijn JA, et, al. Melanostatin (NPY) inhibited electrical activity in frog melanotrophs through modulation of K+, Na+ and Ca2+ currents. J Physiol. 1994 Mar 1;475(2):185-95.

[3]. Saleh MI, et, al. MIF-1 attenuates spiroperidol alteration of striatal dopamine D2 receptor ontogeny. Peptides. 1989 Jan-Feb;10(1):35-9.

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