RF9 hydrochloride

Cat. No.: HY-107382A

Molecular Formula: $C_{26}H_{39}ClN_6O_3$

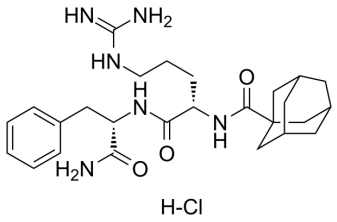
Molecular Weight: 519.08

Target: Neuropeptide Y Receptor

Pathway: GPCR/G Protein; Neuronal Signaling

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 (96.32 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	1.9265 mL	9.6324 mL	19.2649 mL
	5 mM	0.3853 mL	1.9265 mL	3.8530 mL
	10 mM	0.1926 mL	0.9632 mL	1.9265 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 (4.01 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.08 mg/mL (4.01 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.08 mg/mL (4.01 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

RF9 hydrochloride is a potent and selective Neuropeptide FF receptor antagonist, with K_i values of 58 and 75 nM for hNPFF1R and hNPFF2R, respectively[1][2].

IC_{50} & Target

hNPFF1R	hNPFF2R
58 nM (Ki)	75 nM (Ki)

In Vitro

RF9 (10 μM) pretrement completely blocks NPFF induced neurite outgrowth of Neuro 2A cells[2].

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

In Vivo

RF9 (0.1 mg/kg, s.c.) with heroin coadministration prevents heroin-induced delayed hyperalgesia and tolerance[1].
RF9 (10 μg) infused alone does not result in a significant alteration of MAP or heart rate. Conversely, MAP and heart rate increases evoked by NPFF are significantly blocked when NPFF is applied in conjunction with RF9[1].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Rats[1]
Dosage:	0.1 mg/kg.
Administration:	S.C. 30 min before 0.3 mg/kg heroin or saline on basal nociceptive threshold in rats.
Result:	Opposed to delaye heroin-induced hyperalgesia and associated tolerance.

REFERENCES

[1]. Simonin F, et al. RF9, a potent and selective neuropeptide FF receptor antagonist, prevents opioid-induced tolerance associated with hyperalgesia. Proc Natl Acad Sci U S A. 2006 Jan 10;103(2):466-71.

[2]. Ting Zhang, et al. Discovery of Two Novel Branched Peptidomimetics Containing endomorphin-2 and RF9 Pharmacophores: Synthesis and Neuropharmacological Evaluation. Bioorg Med Chem. 2019 Feb 15;27(4):630-643.

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