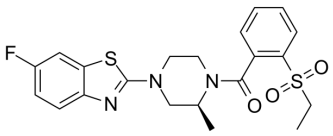
ARN19702

Cat. No.:	HY-145339
CAS No.:	1971937-18-4
Molecular Formula:	$C_{21}H_{22}FN_3O_3S_2$
Molecular Weight:	447.55
Target:	Others
Pathway:	Others

Storage:

Powder	-20°C	3 years
	4°C	2 years
In solvent	-80°C	6 months
	-20°C	1 month



SOLVENT & SOLUBILITY

In Vitro

DMSO : 100 mg/mL (223.44 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	2.2344 mL	11.1719 mL	22.3439 mL
	5 mM	0.4469 mL	2.2344 mL	4.4688 mL
	10 mM	0.2234 mL	1.1172 mL	2.2344 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 (5.59 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (5.59 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (5.59 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

ARN19702 is a selective, orally active, reversible, and brain-penetrant N-acylethanolamine acid amidase (NAAA) inhibitor with an IC_{50} of 230 nM for human NAAA. ARN19702 has pain relief effects[1][2].

IC_{50} & Target

IC50: 230 nM (human NAAA)[2]

In Vivo

ARN19702 (3-10 mg/kg; po; daily; for 7 consecutive days) reduces nociception associated with Paclitaxel-induced neuropathy without development of subacute antinociceptive tolerance in male rats[1].

In male mice, ARN19702 (0.1-30 mg/kg; po) attenuates in a dose-dependent manner the spontaneous nocifensive response elicited by intraplantar formalin injection and the hypersensitivity caused by intraplantar carrageenan injection, paw incision, or sciatic nerve ligation[1].

. ARN19702 (3-10 mg/kg; po) produces remarkable protective effects against multiple sclerosis in mice[2].

Pharmacokinetic properties of ARN19702 in mice

	3 mg/kg,i.v	3 mg/kg, p.o.
C_{max} (ng/mL)	1660±166	613±68
T_{max} (min)	(5.0)	30
CL (mL/min/Kg)	33.2±1.6	49±8
$t_{1/2}$ (min)	73.9±3.7	104±16
AUC_{plasma} (h×ng/mL)	1366.8±68.3	988±157
AUC_{brain} (h×ng/mL)	404.3±109.1	181±28
F (%)	-	72±11

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

Animal Model:	Sprague-Dawley rats (200-220 g) injected with Paclitaxel[1]
Dosage:	3 mg/kg and 10 mg/kg
Administration:	Oral administration; daily; for 7 consecutive days (sub-chronic)
Result:	Reduced nociception associated with Paclitaxel-induced neuropathy.

REFERENCES

[1]. Yannick Fotio, et al. Antinociceptive Profile of ARN19702, (2-Ethylsulfonylphenyl)-[(2S)-4-(6-fluoro-1,3-benzothiazol-2-yl)-2-methylpiperazin-1-yl]methanone, a Novel Orally Active N-Acylethanolamine Acid Amidase Inhibitor, in Animal Models. J Pharmacol Exp Ther. 2021 Aug;378(2):70-76.

[2]. Marco Migliore Dr, et al. Second-Generation Non-Covalent NAAA Inhibitors are Protective in a Model of Multiple Sclerosis. Angew Chem Int Ed Engl. 2016 Sep 5;55(37):11193-11197.

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