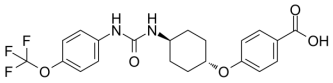
UC-1728

Cat. No.:	HY-114266
CAS No.:	948304-40-3
Molecular Formula:	$C_{21}H_{21}F_3N_2O_5$
Molecular Weight:	438.4
Target:	Epoxide Hydrolase
Pathway:	Metabolic Enzyme/Protease
Storage:	4°C, protect from light * In solvent : -80°C, 6 months; -20°C, 1 month (protect from light)



SOLVENT & SOLUBILITY

In Vitro

DMSO : 50 mg/mL (114.05 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	2.2810 mL	11.4051 mL	22.8102 mL
	5 mM	0.4562 mL	2.2810 mL	4.5620 mL
	10 mM	0.2281 mL	1.1405 mL	2.2810 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: ≥ 1 mg/mL (2.28 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 1 mg/mL (2.28 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

UC-1728 is a potent rabbit soluble epoxide hydrolase (sEH) inhibitor, with an IC_{50} of 2 nM on rabbit liver.

IC_{50} & Target

IC50: 2 nM (rabbit sHE)[1].

In Vivo

Miotic, fixed pupils are observed in the treated eyes of both groups receiving LPS injections but the difference in pupillary light reflex scores is only significantly increased in the UC-1728/LPS treated group relative to the PBS group at 6 h post-injection[1]. Pretreatment with UC-1728 (t-TUCB) at 10 and 30 mg/kg, p.o., significantly prevents ISO induced increase in heart weight and elevation of CK-MB and LDH levels ($p<0.05$), indicating its cardioprotective effect against ISO induced cardiac injury. At 3 mg/kg, p.o. UC-1728 only shows significant protection against heart weight changes. Pretreatment with UC-1728 at 3, 10 and 30 mg/kg, p.o., significantly reduces the ISO induced infarct size ($p<0.05$) when compared to control. The calculated percentage reductions for these doses are found to by 15.90, 46.60 and 40.44%, respectively[2]. Inhibition of

sEH with UC-1728 is associated with a significant improvement in pain scores in one horse with laminitis whose pain is refractory to the standard of care therapy. No adverse effects are noticed[3].

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

PROTOCOL

Animal Administration [1]

Mice[1]

Eighteen male SPF New Zealand White Rabbits (2.6-3.2 Kg) are randomly assigned to 3 groups of 6 rabbits each. Rabbits in group 1 have 20 µL sterile PBS intracamerally injected in the right eye (negative control) and all other rabbits receive 100 ng LPS in 20 µL of PBS. Groups 2 and 3 are treated with anti-inflammatory drug or vehicle once daily on the following schedule: 24 h prior to intra-cameral LPS or PBS injection, the day of injection and 24 h post-injection. Group 2 receive UC-1728 (3 mg/kg, SC) and Group 3 receive PEG400 vehicle only (0.9 mL, subcutaneously, (SC)). To limit post-procedural discomfort, systemic buprenorphine (0.03 mg/kg SC) is administered immediately prior to returning rabbits to their cages upon recovery from anesthesia, then every 6-12 h for the first 24 h and as needed for the duration of the study[1].

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

REFERENCES

[1]. McLellan GJ, et al. Effect of a Soluble Epoxide Hydrolase Inhibitor, UC1728, on LPS-Induced Uveitis in the Rabbit. J Ocul Biol. 2016 Jan;4(1).

[2]. Shrestha A, et al. Soluble epoxide hydrolase inhibitor, t-TUCB, protects against myocardial ischaemic injury in rats. J Pharm Pharmacol. 2014 Sep;66(9):1251-8.

[3]. Guedes AG, et al. Use of a soluble epoxide hydrolase inhibitor as an adjunctive analgesic in a horse with laminitis. Vet Anaesth Analg. 2013 Jul;40(4):440-8.

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