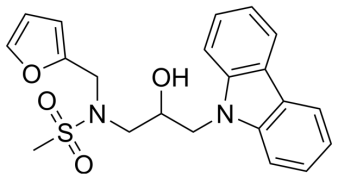
KL001

Cat. No.:	HY-108468
CAS No.:	309928-48-1
Molecular Formula:	$C_{21}H_{22}N_2O_4S$
Molecular Weight:	398.48
Target:	Cryptochrome
Pathway:	Metabolic Enzyme/Protease
Storage:	-20°C, stored under nitrogen * In solvent : -80°C, 6 months; -20°C, 1 month (stored under nitrogen)



SOLVENT & SOLUBILITY

In Vitro

DMSO : 5 mg/mL (12.55 mM; ultrasonic and warming and heat to 60°C)

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	1 mM	2.5095 mL	12.5477 mL	25.0954 mL
	5 mM	0.5019 mL	2.5095 mL	5.0191 mL
	10 mM	0.2510 mL	1.2548 mL	2.5095 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: ≥ 1.25 mg/mL (3.14 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 1.25 mg/mL (3.14 mM); Suspended solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 1.25 mg/mL (3.14 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

KL001 is a first-in-class cryptochrome (CRY, a flavoproteins that are sensitive to blue light, and is involved in the circadian rhythms of plants and animals) stabilizer which specifically interacts with CRY1 and CRY2. KL001 prevents ubiquitin-dependent degradation of CRY, resulting in lengthening of the circadian period. KL001 has the potential to control fasting hormone-induced gluconeogenesis[1][2][3].

In Vitro

KL001 (0.03-71 μM) causes circadian period lengthening and amplitude reduction in a dose-dependent manner in stable U2OS reporter cell lines harboring Bmal1-dLuc or Per2-dLuc[1].
KL001 (2-8 μM; 18 h) represses glucagon-dependent induction of Pck1 and G6pc genes in a dose-dependent manner without affecting their basal expression in mouse primary hepatocytes[1].

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

REFERENCES

[1]. Hirota T, et, al. Identification of small molecule activators of cryptochrome. Science. 2012 Aug 31;337(6098):1094-7.

[2]. Kelleher FC, et, al. Circadian molecular clocks and cancer. Cancer Lett. 2014 Jan 1;342(1):9-18.

[3]. Nangle S, et, al. Crystal structure of mammalian cryptochrome in complex with a small molecule competitor of its ubiquitin ligase. Cell Res. 2013 Dec;23(12):1417-9.

Caution: Product has not been fully validated for medical applications. For research use only.

Tel: 609-228-6898 Fax: 609-228-5909 E-mail: tech@MedChemExpress.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA