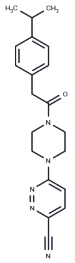
Data Sheet (Cat.No.T5185)

PZ-2891

Chemical Properties



CAS No. : 2170608-82-7

Formula: C20H23N5O

Molecular Weight: 349.43

Storage: Store at low temperature
Powder: -20°C for 3 years | In solvent: -80°C for 1 year
Actual storage temperature shall be subject to the COA.

Biological Description

Description	PZ-2891 is an orally bioavailable, brain-penetrant pantothenate kinase (PANK) modulator, with an IC50 of 1.3 nM for hPANK3.
Targets(IC50)	Others
In vivo	Oral administration of PZ-2891 increases CoA levels in mouse liver and brain.?A knockout mouse model of brain CoA deficiency exhibited weight loss, severe locomotor impairment and early death.?Knockout mice on PZ-2891 therapy gain weight, and have improved locomotor activity and life span establishing pantazines as novel therapeutics for the treatment of PKAN.
Animal Research	C57Bl6/J mice (8-week-old) ?pantothenic acid-supplemented diet (1000 ppm) for 2 weeks prior to the experiment.?The mice were maintained at room temperature 72° ± 2 ° F, humidity 50 ± 10% and a 14 h light /10 h dark cycle with the dark cycle starting at 18: 00 h. Water was supplied ad libitum.?The mice were randomized into the treatment arms to achieve a normal weight distribution.?PZ-2891 was formulated in 30% Captisol, and was administered by oral gavage at 12 h intervals for 5 doses.?The mice were euthanized and tissues harvested 4 h after the last dose.?The tissue samples were used for total CoA, pantothenate and pantazine determinations.?Blood was collected from euthanized animals, plasma or serum was prepared and stored frozen until analysis.? Organs, including liver, forebrain, and hindbrain were quickly excised from euthanized animals and immediately flash frozen in liquid N2 or immersed in RNAlater overnight prior to freezing.?Forebrain and hindbrain regions were identified.?Total CoA was determined using 20–50 mg of tissue (liver, forebrain or hindbrain) homogenized in 2 ml of 1 mM KOH.?The pH was adjusted to 12.0 with 0.25 M KOH, and incubated at 55 °C for 2 h.?The pH of the sample was adjusted to 8.0, and the samples were derivatized with monobromobimane (mBBr) and analyzed by HPLC equipped with a fluorescence detector

Solubility Information

Solubility	DMSO: 75 mg/mL (214.64 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

In vivo Formulation	10% DMSO+90% Corn Oil: 3.3 mg/mL (9.44 mM),Sonication is recommended. *Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.*

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.8618 mL	14.309 mL	28.618 mL
5 mM	0.5724 mL	2.8618 mL	5.7236 mL
10 mM	0.2862 mL	1.4309 mL	2.8618 mL
50 mM	0.0572 mL	0.2862 mL	0.5724 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

Lalit, Kumar, Sharma, et al. A therapeutic approach to pantothenate kinase associated neurodegeneration.[J]. Nature communications, 2018.