ZL006

Cat. No.: HY-100456

CAS No.: 1181226-02-7

Molecular Formula: $C_{14}H_{11}Cl_2NO_4$

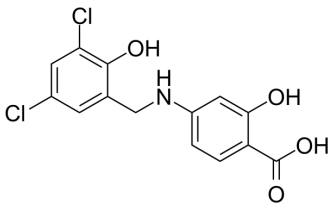
Molecular Weight: 328.15

Target: iGluR

Pathway: Membrane Transporter/Ion Channel; Neuronal Signaling

Storage:

Powder	-20°C	3 years
	4°C	2 years
In solvent	-80°C	2 years
	-20°C	1 year



SOLVENT & SOLUBILITY

In Vitro

DMSO : 25 mg/mL (76.18 mM; Need ultrasonic)

H_2O : < 0.1 mg/mL (insoluble)

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	1 mM	3.0474 mL	15.2369 mL	30.4739 mL
	5 mM	0.6095 mL	3.0474 mL	6.0948 mL
	10 mM	0.3047 mL	1.5237 mL	3.0474 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 (7.62 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (7.62 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (7.62 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

ZL006 is a potent inhibitor of nNOS/PSD-95 interaction, and inhibits NMDA receptor-mediated NO synthesis.

In Vitro

ZL006 presents little cytotoxicity, and a growth inhibition of BCECs is not found at low concentration of 0.001, 0.01, 0.1, 1 and 10 μg/mL. The cytotoxicity of T7-P-LPs/ZL006 is significantly enhanced at the concentration of 10 μg/mL. Cellular uptake of ZL006 loads P-LPs and T7-P-LPs after incubation for 0.5 h at the concentrations range from 100 μg/mL to 600 μg/mL in BCECs[1]. ZL006 does not inhibit the nNOS-PDZ/PSD-95-PDZ interaction, or perturb the nNOS β-finger[2].

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

In Vivo	Compared with P-LPs/ZL006 and free ZL006, T7-P-LPs/ZL006 exhibits a significant increase of drug accumulation in the brain tissue due to its better brain targeting delivery. Compared with free ZL006, P-LPs/ZL006 and T7-P-LPs/ZL006 exhibit a significant decrease of drug accumulation in the liver and kidney[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

PROTOCOL

Cell Assay [1]	BCECs are seeded in 96-well plates in 200 μL of DMEM medium to obtain a concentration of 2000 cells per well, and incubated for 24 h. The medium in each well is then incubated for 72 h with 200 μL medium containing blank vehicle, P-LPs/ZL006, T7-P-LPs/ZL006 and ZL006 (free drug dissolved in DMSO) with a series of concentrations ranging from 0.001 to 100 μg/mL. The MTT absorbance at 570 nm of each well is measured by a microplate reader. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
Animal Administration [1]	ICR mice weighting 20 ± 2 g are divided into three groups at random (n=12). Free ZL006, P-LPs/ZL006 and T7-P-LPs/ZL006 (all containing ZL006 4 mg/kg) are administered to each group through intravenous route, respectively. At designated time intervals (0.5, 1 and 2 h), the mice are executed and the major organs samples including brain, heart, liver, spleen, lung and kidney are collected. Before pretreatment, these tissues are rinsed with cold saline solution to remove the blood and then blotted with paper towel. Protein precipitation of the samples is performed before analysis. Then the samples are injected into the LC-MS/MS systems for analysis. The LC-MS/MS system consists of an Agilent Series 1200 HPLC system and a 6410 Triple Quad LC/MS mass spectrometer. The data is collected and processed using the Agilent MassHunter Workstation Software. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

[1]. Wang Z, et al. Enhanced anti-ischemic stroke of ZL006 by T7-conjugated PEGylated liposomes drug delivery system. Sci Rep. 2015 Jul 29;5:12651.

[2]. Bach A, et al. Biochemical investigations of the mechanism of action of small molecules ZL006 and IC87201 as potential inhibitors of the nNOS-PDZ/PSD-95-PDZ interactions. Sci Rep. 2015 Jul 16;5:12157.

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