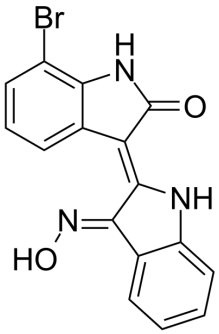
7BIO

Cat. No.:	HY-121035
CAS No.:	916440-85-2
Molecular Formula:	$C_{16}H_{10}BrN_3O_2$
Molecular Weight:	356.17
Target:	CDK; GSK-3
Pathway:	Cell Cycle/DNA Damage; PI3K/Akt/mTOR; Stem Cell/Wnt
Storage:	4°C, protect from light * In solvent : -80°C, 6 months; -20°C, 1 month (protect from light)



SOLVENT & SOLUBILITY

In Vitro

DMSO : 250 mg/mL (701.91 mM; Need ultrasonic)
Ethanol : 50 mg/mL (140.38 mM; Need ultrasonic)

Preparing Stock Solutions

Concentration \ Solvent \ Mass	1 mg	5 mg	10 mg
1 mM	2.8076 mL	14.0382 mL	28.0765 mL
5 mM	0.5615 mL	2.8076 mL	5.6153 mL
10 mM	0.2808 mL	1.4038 mL	2.8076 mL

Please refer to the solubility information to select the appropriate solvent.

In Vivo

1. Add each solvent one by one: 10% EtOH >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.5 mg/mL (7.02 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.08 mg/mL (5.84 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

7BIO (7-Bromoindirubin-3-Oxime) is the derivate of indirubin. 7BIO (7-Bromoindirubin-3-Oxime) has inhibitory effects against cyclin-dependent kinase-5 (CDK5) and glycogen synthase kinase-3β (GSK3β). 7BIO (7-Bromoindirubin-3-Oxime) inhibits Aβ oligomer-induced neuroinflammation, synaptic impairments, tau hyper-phosphorylation, activation of astrocytes and microglia, and attenuates Aβ oligomer-induced cognitive impairments in mice[1].

IC_{50} & Target	CDK5	GSK3β

In Vitro

7BIO (1 and 10 μM; 24 hours) has neuroprotective effects and can prevent, but cannot rescue Aβ1−42 oligomer-induced cell death in SH-SY5Y cells[1].

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

Cell Viability Assay[1]

Cell Line:	SH-SY5Y cells
Concentration:	1 and 10 μM
Incubation Time:	24 hours
Result:	Inhibit Aβ oligomer-induced neuronal death. 7BIO prevented, but did not rescue Aβ1−42 oligomer-induced cell death in SH-SY5Y cells.

In Vivo

7Bio (2.3, 7.0, and 23.3 μg/kg; bilateral ventricle injection) significantly attenuates Aβ oligomer-induced impairment of recognition, spatial learning and memory in mice[1].
7Bio (2.3, 7.0, and 23.3 μg/kg; bilateral ventricle injection) decreases Aβ oligomer-induced increase of TNF-α and IL-6 production in the brain and the expression of synapsin-1 and PSD-95 in the hippocampal region of mice[1].
7Bio (2.3, 7.0, and 23.3 μg/kg; bilateral ventricle injection) attenuates Aβ oligomer-induced increase expression of pTau, activation of microglia and astrogliosis in the brain of mice[1].
7Bio (2.3, 7.0, and 23.3 μg/kg; bilateral ventricle injection) prevents decreased expression of pSer9-GSK3β and has no significant effects on the Tau protein level[1].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	8 weeks mice (30 g)[1]
Dosage:	2.3, 7.0, and 23.3 μg/kg
Administration:	bilateral ventricle injection
Result:	Attenuates Aβ oligomer-induced impairment of recognition, spatial learning and memory in mice.

REFERENCES

[1]. Chen L, et al. Indirubin Derivative 7-Bromoindirubin-3-Oxime (7Bio) Attenuates Aβ Oligomer-Induced Cognitive Impairments in Mice. Front Mol Neurosci. 2017;10:393.

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