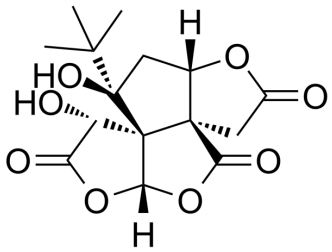
Bilobalide

Cat. No.:	HY-N0076
CAS No.:	33570-04-6
Molecular Formula:	$C_{15}H_{18}O_8$
Molecular Weight:	326.3
Target:	Apoptosis; Autophagy; Endogenous Metabolite
Pathway:	Apoptosis; Autophagy; Metabolic Enzyme/Protease
Storage:	Powder -20°C 3 years 4°C 2 years In solvent -80°C 6 months -20°C 1 month



SOLVENT & SOLUBILITY

In Vitro

DMSO : ≥ 100 mg/mL (306.47 mM)

* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	3.0647 mL	15.3233 mL	30.6466 mL
5 mM	0.6129 mL	3.0647 mL	6.1293 mL
10 mM	0.3065 mL	1.5323 mL	3.0647 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: ≥ 2.08 mg/mL (6.37 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.08 mg/mL (6.37 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.08 mg/mL (6.37 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Bilobalide, a sesquiterpene trilactone constituent of Ginkgo biloba, inhibits the NMDA-induced efflux of choline with an IC_{50} value of 2.3 μM. Bilobalide prevents apoptosis through activation of the PI3K/Akt pathway in SH-SY5Y cells. Exerts protective and trophic effects on neurons[1][2].

IC_{50} & Target

Human Endogenous Metabolite

In Vitro

Bilobalide (1-100 μM) completely suppresses the NMDA-evoked release of choline in a concentration-dependent manner with IC_{50} value of 2.3 μM[1].

Bilobalide (1, 5 and 10 μM) alone for 24 h does not affect cell viability of SH-SY5Y cells. Pre-treatment of cells with Bilobalide concentration-dependently prevents Aβ 1-42-, H_2O_2- and serum deprivation-induced decrease of cell viability, with the best protective effect obtained at 10 μM[2].

Bilobalide (5 and 10 μM; 24 h) treatment dose-dependently increases levels of p-Akt (Ser473 and Thr308) in SH-SY5Y cells[2].

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

Western Blot Analysis

Cell Line:	SH-SY5Y cells
Concentration:	5 and 10 μM
Incubation Time:	24 hours
Result:	Induced a significant increase in levels of p-Akt (Ser473 and Thr308).

In Vivo

Bilobalide (20 mg/kg) completely suppresses the NMDA-induced release of choline in vivo while basal choline levels were not significantly affected. NMDA causes a release of choline in vivo when infused into the hippocampus of freely moving rats by retrograde dialysis. Bilobalide (20 mg/kg i.p.) completely inhibits the effect induced by NMDA[1].

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

Animal Model:	Male Wistar rats (250-350 g)[1]
Dosage:	20 mg/kg
Administration:	I.p. injection 60 min before NMDA infusion
Result:	Lowered basal choline efflux only slightly (by 7%) but fully antagonized the NMDA-induced increase of choline release. The convulsive effect of NMDA was almost completely suppressed.

CUSTOMER VALIDATION

- Research Square Preprint. 2021 Aug.

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REFERENCES

[1]. O Weichel, et al. Bilobalide, a constituent of Ginkgo biloba, inhibits NMDA-induced phospholipase A2 activation and phospholipid breakdown in rat hippocampus. Naunyn Schmiedebergs Arch Pharmacol. 1999 Dec;360(6):609-15.

[2]. Chun Shi, et al. Bilobalide prevents apoptosis through activation of the PI3K/Akt pathway in SH-SY5Y cells. Apoptosis. 2010 Jun;15(6):715-27.

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

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