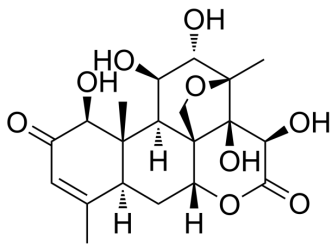
Bruceine D

Cat. No.:	HY-N3014
CAS No.:	21499-66-1
Molecular Formula:	$C_{20}H_{26}O_9$
Molecular Weight:	410.42
Target:	Notch; Apoptosis; Parasite
Pathway:	Neuronal Signaling; Stem Cell/Wnt; Apoptosis; Anti-infection
Storage:	4°C, protect from light * In solvent : -80°C, 6 months; -20°C, 1 month (protect from light)



SOLVENT & SOLUBILITY

In Vitro

DMSO : 100 mg/mL (243.65 mM; Need ultrasonic)
H_2O : 5 mg/mL (12.18 mM; ultrasonic and warming and heat to 60°C)

Preparing Stock Solutions

Mass / Solvent / Concentration	1 mg	5 mg	10 mg
1 mM	2.4365 mL	12.1826 mL	24.3653 mL
5 mM	0.4873 mL	2.4365 mL	4.8731 mL
10 mM	0.2437 mL	1.2183 mL	2.4365 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 (6.09 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (6.09 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (6.09 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Bruceine D is a Notch inhibitor with anti-cancer activity and induces apoptosis in several human cancer cells. Bruceine D is an effective botanical insect antifeedant with outstanding systemic properties, causing potent pest growth inhibitory activity[1][2]. Bruceine D has strong anthelmintic activity against D. intermedius with an EC_{50} value of 0.57 mg/L[3].

IC_{50} & Target

Notch[1]

In Vitro

Bruceine D inhibits the cell viability of H460 and A549 cells in a dose-dependent manner with IC_{50} values of 0.5 and 0.6 μM, respectively, at 48 h of treatment[1].

Bruceine D (0.125-1.0 μM) dose-dependently promotes chromatin condensation, Annexin V-positive cell population and caspase-dependent apoptosis in H460 and A549 cells[1].

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

CUSTOMER VALIDATION

- Phytomedicine. 2023 Jun 16, 154928.
- Pharmaceuticals. 2022, 15(2), 179.
- ACS Omega. August 5, 2022.

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REFERENCES

[1]. Mao G,et al. Bruceine D Isolated from Brucea Javanica (L.) Merr. as a Systemic Feeding Deterrent for Three Major Lepidopteran Pests. J Agric Food Chem. 2019 Apr 17;67(15):4232-4239.

[2]. Cheng Z, et al. Bruceine D inhibits hepatocellular carcinoma growth by targeting β-catenin/jagged1 pathways. Cancer Lett. 2017 Sep 10;403:195-205.

[3]. Yong Wang, et al. In vivo anthelmintic activity of bruceine A and bruceine D from Brucea javanica against Dactylogyrus intermedius (Monogenea) in goldfish (Carassius auratus). Vet Parasitol. 2011 Apr 19;177(1-2):127-33.

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

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