ABMA

Cat. No.: HY-124801

CAS No.: 332108-65-3

Molecular Formula: $C_{18}H_{24}BrNO$

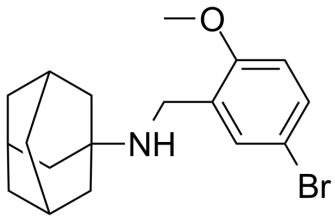
Molecular Weight: 350.29

Target: Bacterial; Influenza Virus; Parasite

Pathway: Anti-infection

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 : 125 mg/mL (356.85 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	2.8548 mL	14.2739 mL	28.5478 mL
	5 mM	0.5710 mL	2.8548 mL	5.7096 mL
	10 mM	0.2855 mL	1.4274 mL	2.8548 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: ≥ 6.25 mg/mL (17.84 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 6.25 mg/mL (17.84 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 6.25 mg/mL (17.84 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

ABMA is a broad-spectrum inhibitor of intracellular toxins and pathogens. ABMA efficiently protects cells against various toxins and pathogens including viruses, intracellular bacteria and parasite. ABMA selectively acts at host cell late endosomes rather than targeting toxin or pathogen itself. ABMA has broad-spectrum anti-infection activity[1][2].

IC_{50} & Target

Intracellular bacteria[1]
Viruses[1]
Parasite[1]

In Vitro	ABMA protects cells against four bacterial toxins (Corynebacterium diphtheriae (DT; EC_{50} of 62.9 μM), Bacillus anthracis (LT), Clostridium difficile toxin B (TcdB; EC_{50} of 73.3 μM), Clostridium sordellii lethal toxin (TcsL; EC_{50} of 86.7 μM)), three viruses (Ebola (EC_{50} of 3.3 μM), rabies (EC_{50} of 19.4 μM), dengue-4 virus (EC_{50} of 8.2 μM)), two species of Chlamydiales intracellular bacteria (Simkania negevensis and Chlamydia trachomatis), and the parasite Leishmania infantum (EC_{50} of 7.1 μM) at micromolar level[1]. In A549 cells, ABMA treatment induces a decrease in ricin cytotoxicity with an EC_{50} of 3.8 μM, and a protection factor (R) at 30 μM ranging from 5 to 10. ABMA retained almost 100% of its biological activity against ricin-induced cytotoxicity up to six days [1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	ABMA (2-200 mg/kg; intraperitoneal injection; female BALB/c mice) treatment protects mice from nasal instillation of an LD_{90} of ricin[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Pathogen-free female BALB/c mice (6 week-old) with ricin[1]
Dosage:	2 mg/kg, 20 mg/kg, 200 mg/kg
Administration:	Intraperitoneal injection
Result:	A statistically significant protection according to survival curves was observed with a single ip dose of 2 mg/kg. The 20 mg/kg dose fully protected animals through to day 21. The 200 mg/kg dose resulted in 80% of protection of mice against ricin challenge with a single animal succumbing on day 15.

REFERENCES

[1]. Wu Y, et al. ABMA, a small molecule that inhibits intracellular toxins and pathogens by interfering with late endosomal compartments.

[2]. Wu Y, et al. DABMA: A Derivative of ABMA with Improved Broad-Spectrum Inhibitory Activity of Toxins and Viruses. ACS Med Chem Lett. 2019 Jul 2;10(8):1140-1147.

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