Benproperine phosphate

Cat. No.: HY-114657A

CAS No.: 19428-14-9

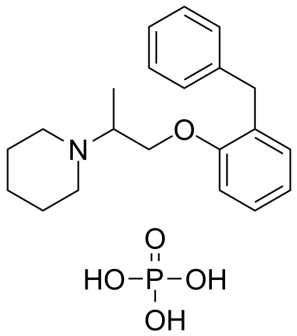
Molecular Formula: $C_{21}H_{30}NO_5P$

Molecular Weight: 407.44

Target: Arp2/3 Complex

Pathway: Cytoskeleton

Storage: 4°C, sealed storage, away from moisture
* In solvent : -80°C, 2 years; -20°C, 1 year (sealed storage, away from moisture)



SOLVENT & SOLUBILITY

In Vitro

DMSO : 125 mg/mL (306.79 mM; ultrasonic and warming and heat to 60°C)
H_2O : ≥ 100 mg/mL (245.43 mM)
* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	1 mM	2.4543 mL	12.2717 mL	24.5435 mL
	5 mM	0.4909 mL	2.4543 mL	4.9087 mL
	10 mM	0.2454 mL	1.2272 mL	2.4543 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 (5.11 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.08 mg/mL (5.11 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.08 mg/mL (5.11 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Benproperine phosphate is an orally active, potent actin-related protein 2/3 complex subunit 2 (ARPC2) inhibitor. Benproperine phosphate attenuates the actin polymerization rate of action polymerization nucleation by impairing Arp2/3 function. Benproperine phosphate has the potential for a cough suppressant and suppresses cancer cell migration and tumor metastasis[1].

In Vitro

Benproperine phosphate (20-120 μM; for 24 hours) inhibits cell viability in a dose-dependent manner[1].
Benproperine phosphate (10 μM; for 24 hours) significantly inhibits the migration of various types of cancer cells and inhibits

the migration and invasion of DLD-1, AsPC-1 cells with IC_{50} values of 1-2 μM. Benproperine phosphate (10 μM; for 24 hours) does not affect cortactin-rich lamellipodium in MCF-10A cells[1].

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

Cell Viability Assay[1]

Cell Line:	DLD-1, AsPC-1, CFPAC-1, A375P, A375P, MDA-MB-231, DU145, DU145 cancer cells
Concentration:	20, 40, 60, 80, 100, 120 μM
Incubation Time:	For 24 hours
Result:	Inhibited cell viability in a dose-dependent manner.

In Vivo

Benproperine phosphate (50, 100 mg/kg; oral gavage; 5 days per week for 4 weeks) inhibits primary pancreatic tumor growth [1].

Benproperine phosphate shows a marked decrease in the lung metastasis of AsPC-1 cells (56.1% inhibition) in mouse. Benproperine phosphate significantly suppressed the liver metastasis of HCT-116 cells by 78.9% and DLD-1 cells by 78.2%[1].

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

Animal Model:	Female BALB/c nude mice of 6-week-old with AsPC-1 cells[1]
Dosage:	50, 100 mg/kg
Administration:	Oral gavage; 5 days per week for 4 weeks
Result:	Inhibited primary pancreatic tumor growth compared to the vehicle control (47.7% inhibition) without body weights change.

REFERENCES

[1]. Yae Jin Yoon, et al. Benproperine, an ARPC2 inhibitor, suppresses cancer cell migration and tumor metastasis. Biochem Pharmacol. 2019 May;163:46-59.

Tel: 609-228-6898 Fax: 609-228-5909 E-mail: tech@MedChemExpress.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA