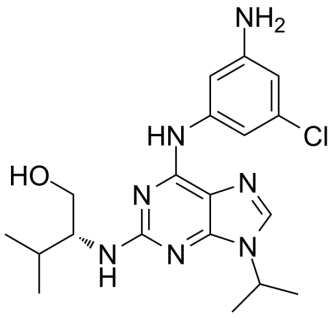
Aminopurvalanol A

Cat. No.:	HY-104013
CAS No.:	220792-57-4
Molecular Formula:	$C_{19}H_{26}ClN_7O$
Molecular Weight:	403.91
Target:	CDK; Apoptosis
Pathway:	Cell Cycle/DNA Damage; Apoptosis
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 (247.58 mM; Need ultrasonic)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	2.4758 mL	12.3790 mL	24.7580 mL
5 mM	0.4952 mL	2.4758 mL	4.9516 mL
10 mM	0.2476 mL	1.2379 mL	2.4758 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 (6.19 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (6.19 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Aminopurvalanol A is a potent, selective, and cell permeable inhibitor of Cyclins/Cdk complexes. Aminopurvalanol A preferentially targets the G2/M-phase transition inhibiting cancer cell differentiation. Aminopurvalanol A causes the inhibition of sperm fertilizing ability via the inhibition of physiological capacitation-dependent actin polymerization[1][2].

IC_{50} & Target

Cyclins/Cdk[1]

In Vitro

Aminopurvalanol A (5 and 40 μM; 8 hours) inhibits cell growth primarily by arresting the cells in the G2 phase of the cell cycle and, at higher concentration, triggering apoptosis[2].

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

Cell Cycle Analysis[2]

Cell Line:	Human U937 leukemic cells
Concentration:	5 and 40 μM
Incubation Time:	8 hours
Result:	Increased the number of cells with a 4N DNA content as early as 8 h after the beginning of treatment at 5 μM. 40 μM led to cellular fragmentation and cells with an irregular DNA distribution, characteristic of apoptotic cell populations.

Apoptosis Analysis[2]

Cell Line:	Human U937 leukemic cells
Concentration:	5 and 40 μM
Incubation Time:	8 hours
Result:	40 μM Aminopurvalanol A led to apoptosis rather than after the beginning of treatment at 5 μM.

REFERENCES

[1]. Bernabò N, et al. Aminopurvalanol A, a Potent, Selective, and Cell Permeable Inhibitor of Cyclins/Cdk Complexes, Causes the Reduction of in Vitro Fertilizing Ability of Boar Spermatozoa, by Negatively Affecting the Capacitation-Dependent Actin Polymerization. Front Physiol. 2017;8:1097.

[2]. Rosania GR, et al. A cyclin-dependent kinase inhibitor inducing cancer cell differentiation: biochemical identification using Xenopus egg extracts. Proc Natl Acad Sci U S A. 1999;96(9):4797-4802.

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