4-MMPB

Cat. No.: HY-118480

CAS No.: 928853-86-5

Molecular Formula: $C_{16}H_{19}N_5S$

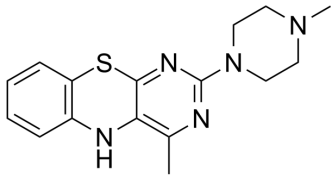
Molecular Weight: 313.42

Target: Lipoxygenase; Apoptosis

Pathway: Metabolic Enzyme/Protease; 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 : 7.69 mg/mL (24.54 mM; Need ultrasonic)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	3.1906 mL	15.9530 mL	31.9061 mL
5 mM	0.6381 mL	3.1906 mL	6.3812 mL
10 mM	0.3191 mL	1.5953 mL	3.1906 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: ≥ 0.77 mg/mL (2.46 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 0.77 mg/mL (2.46 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 0.77 mg/mL (2.46 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

4-MMPB is a selective inhibitor of 15-lipoxygenase, with an IC_{50} of 18 μM. 4-MMPB has IC_{50}s of 19.5 μM and 19.1 μM for soybean 15-lipoxygenase (SLO) and human 15-lipoxygenase-1 (15-LOX-1), respectively. 4-MMPB has potential for the research of prostate cancer[1][2][3][4].

IC_{50} & Target

IC50: 18 μM (15-lipoxygenase)[1]

In Vitro

4-MMPB has an IC_{50} of 69.6 μM for DPPH bleaching[2].

4-MMPB exhibits cytotoxic activity on human PC-3 and HFF3 cell lines[4].
4-MMPB (41.48 μM; 72 hours) induces apoptosis and DNA damage in PC-3 Cells[4].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Cell Viability Assay[4]

Cell Line:	DU145 cells, PC-3 cells, HFF3 cells
Concentration:	9.57 μM, 19.94 μM, 39.88 μM, 79.77 μM,159.53 μM
Incubation Time:	24 hours, 48 hours, 72 hours
Result:	Inhibited cells viability (IC_{50}=79.76 μM; 24 h, 51.05 μM; 48 h, 41.48 μM; 72 h for PC-3 cells, IC_{50}=255.25 μM; 24 h, 130.81 μM; 48 h, 98.91 μM; 72 h for HFF3 cells).

REFERENCES

[1]. Mohsen Nikpour, et al. Synthesis of new series of pyrimido[4,5-b][1,4] benzothiazines as 15-lipoxygenase inhibitors and study of their inhibitory mechanism. 2013, 22(10), 5036-5043.

[2]. Seyed Jamal Alavi, et al. A novel class of human 15-LOX-1 inhibitors based on 3-hydroxycoumarin. Chem Biol Drug Des. 2018 Jun;91(6):1125-1132.

[3]. M Bakavoli, et al. Design and synthesis of pyrimido[4,5-b][1,4]benzothiazine derivatives, as potent 15-lipoxygenase inhibitors. Bioorg Med Chem. 2007 Mar 1;15(5):2120-6.

[4]. Saffiyeh Saboormaleki, et al. 7-Farnesyloxycoumarin Exerts Anti-cancer Effects on a Prostate Cancer Cell Line by 15-LOX-1 Inhibition. Arch Iran Med. 2018 Jun 1;21(6):251-259.

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