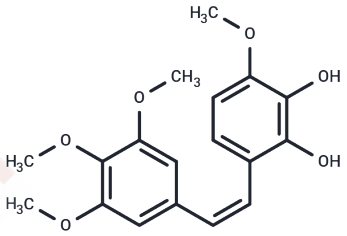
Data Sheet (Cat.No.T36848)

TargetMol

Combretastatin A-1

Chemical Properties



CAS No. : 109971-63-3

Formula: C18H20O6

Molecular Weight: 332.35

Storage: Store at low temperature
Powder: -20°C for 3 years | In solvent: -80°C for 1 year
Actual storage temperature shall be subject to the COA.

Biological Description

Description	Combretastatin A-1 is a potent microtubule inhibitor with anti-tumour and anti-vascular activity, acting through microtubule protein depolymerisation-mediated inactivation of AKT to inhibit the Wnt/β-catenin pathway, and can be used to study hepatocellular carcinoma.
Targets(IC50)	Akt,Microtubule Associated,Wnt/beta-catenin
In vitro	Combretastatin A-1 (CA1P) induces apoptosis of TAMs in vitro through the same mechanism observed in HepG2 cells, and it eliminates TAMs in the tumor microenvironment (TME) in vivo. Combretastatin A-1 (1-10 nM; 24 hours) induces AKT inactivation and removal of GSK-3β inhibition by microtubule depolymerization, leading to HepG2 cell apoptosis [2]. Combretastatin A-1 (1-50 nM; 6 hours) reduces the mitochondrial membrane potential (MMP) of HepG2 cells and induces the accumulation of ROS in a dose-dependent manner [3].
In vivo	In the HepG2 subcutaneous xenograft model, Combretastatin A-1 (1-4mg/kg; i.v. every other day for 4 weeks) significantly reduces the tumor volume [3]. In the orthotopic hepatocellular carcinoma mouse model, Combretastatin A-1 (2 mg/kg; every other day for 21 days) demonstrates enhanced apoptosis [3].

Solubility Information

Solubility	DMSO: 80 mg/mL (240.71 mM),Sonication is recommended. DMF: 5 mg/mL (15.04 mM),Sonication is recommended. Ethanol: 3 mg/mL (9.03 mM),Sonication is recommended. DMSO:PBS (pH 7.2) (1:1): 0.5 mg/mL (1.5 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+40% PEG300+5% Tween 80+45% Saline: 3.3 mg/mL (9.93 mM),Sonication is recommended. *Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.*

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	3.0089 mL	15.0444 mL	30.0888 mL
5 mM	0.6018 mL	3.0089 mL	6.0178 mL
10 mM	0.3009 mL	1.5044 mL	3.0089 mL
50 mM	0.0602 mL	0.3009 mL	0.6018 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

Pettit GR, et al. Isolation, structure, and synthesis of combretastatins A-1 and B-1, potent new inhibitors of microtubule assembly, derived from Combretum caffrum. J Nat Prod. Jan-Feb 1987;50(1):119-31.
Holwell SE, et, al. Anti-tumor and anti-vascular effects of the novel tubulin-binding agent combretastatin A-1 phosphate. Anticancer Res. Nov-Dec 2002;22(6C):3933-40.
Mao J, et, al. Combretastatin A-1 phosphate, a microtubule inhibitor, acts on both hepatocellular carcinoma cells and tumor-associated macrophages by inhibiting the Wnt/β-catenin pathway. Cancer Lett. 2016 Sep 28;380(1): 134-43.