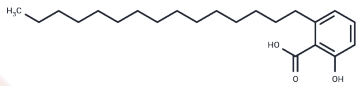
Data Sheet (Cat.No.T6389)

TargetMol

Anacardic Acid

Chemical Properties



CAS No. : 16611-84-0

Formula: C22H36O3

Molecular Weight: 348.52

Appearance: no data available

Storage: Powder: -20°C for 3 years | In solvent: -80°C for 1 year

Biological Description

Description	Anacardic Acid (6-pentadecylsalicylic Acid) is an effective inhibitor of p300 and p300/CBP-associated factor histone acetyltranferases. It also has antimicrobial activity, antibacterial activity, and inhibits prostaglandin synthase, lipoxygenase, and tyrosinase.
Targets(IC50)	Epigenetic Reader Domain,Histone Acetyltransferase,Antibacterial
In vitro	Anacardic acid is an inhibitor of several Clinicalally targeted enzymes such as HATs, NF-kB, LOX-1, xanthine oxidase, tyrosinase, and ureases. Anacardic acid is also an effective inhibitor of Tip60 in vitro. It inhibits the Tip60-dependent acetylation and activation of the ATM protein kinase in HeLa cells and sensitizes the cells to the cytotoxic effects of radiation.
In vivo	Anacardic acid decreases over-expression of Gata4, α-MHC, and cTnT in fetal mouse hearts exposed to ethanol. Anacardic acid inhibits binding of PCAF, P300 to the promoter of Gata4.
Kinase Assay	HAT and HDAC Activity Assays :After homogenization of cardiac tissues, nucleoproteins are extracted using a Nuclear Extract Kit according to the manufacturer's instructions. HAT and HDAC activities of the nuclear protein extracts are determined using a colorimetric assay included in the HAT and HDAC assay kits.
Cell Research	HeLa and 293T cells are grown in Dulbecco's modified Eagle's medium/10% fetal calf serum. SQ20B and SCC35 squamous cell carcinoma cell lines are cultured in modified eagles medium/10% fetal calf serum. For anacardic acid (EMD Biosciences, CA) exposure, cells are preincubated with anacardic acid (0-100 μM) for 40 min, irradiated, then allowed to recover for 4 h. Cells are then switched to fresh media and allowed to grow for 10 days.
Animal Research	Animal Models: 9 to 11 week old Kunming mice. Formulation: Dissolved in DMSO,co-injected with ethanol. Dosages: 0,1.25,2.5,5,10 mg/kg. Administration: i.p.

Solubility Information

Solubility	Ethanol: 17.4 mg/mL (49.93 mM),Sonication is recommended. DMSO: 15 mg/mL (43.04 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.8693 mL	14.3464 mL	28.6928 mL
5 mM	0.5739 mL	2.8693 mL	5.7386 mL
10 mM	0.2869 mL	1.4346 mL	2.8693 mL
50 mM	0.0574 mL	0.2869 mL	0.5739 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.

Reference

Radde BN, et al.J Cell Biochem. 2016 Mar 17.
Yan H, Liu Z, Yan G, et al. A robust high-throughput fluorescence polarization assay for rapid screening of SARS-CoV-2 papain-like protease inhibitors. Virology. 2022
Yao K, et al.Int J Clin Exp Pathol. 2015 Dec 1;8(12):15926-32. eCollection 2015.
Peng C,etal.Inhibition of histone H3K9 acetylation by anacardic acid can correct the over-expression of Gata4 in the hearts of fetal mice exposed to alcohol during pregnancy.PLoS One. 2014 Aug 7;9(8):e104135.
Hemshekhar M,etal.Emerging roles of anacardic acid and its derivatives: a pharmacological overview.Basic Clin Pharmacol Toxicol. 2012 Feb;110(2):122-32.
Peng C, et al. Phenylephrine-induced cardiac hypertrophy is attenuated by a histone acetylase inhibitor anacardic acid in mice. Mol Biosyst. 2017 Mar 28;13(4):714-724.