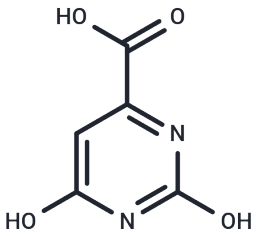
Data Sheet (Cat.No.T0746)

TargetMol
YOUR TARGET MOLECULES

Orotic acid

Chemical Properties



CAS No. : 65-86-1

Formula: C5H4N2O4

Molecular Weight: 156.1

Appearance: no data available

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

Biological Description

Description	Orotic acid (Vitamin B13) is an intermediate product in pyrimidine metabolism.
Targets(IC50)	Nucleoside Antimetabolite/Analog,Dehydrogenase,Endogenous Metabolite
In vitro	Orotic acid increases cell proliferation and decreases apoptosis in serum-starved SK-Hep1 hepatocellular carcinoma cells, which may ascribe to the inhibition of AMP-activated protein kinase (AMPK) phosphorylation and thus activation of mammalian target of rapamycin complex 1 (mTORC1) [1].
In vivo	Male Fischer 344 rats (130-150 g) to two-thirds PH in the absence or in the presence of Orotic acid (a 300-mg tablet of Orotic acid methyl ester implanted intraperitoneally at the time of two-thirds PH). treatment with Orotic acid resulted in a near-100% inhibition of RNR induced by two-thirds PH in rat liver, as monitored by enzyme activity and protein level [2]. Feeding 1% Orotic acid with diet decreased the phosphorylation of AMPK and increased the maturation of SREBP-1 and the expression of SREBP-responsive genes in the rat liver. Orotic acid-induced lipid accumulation was also completely inhibited by rapamycin. Mouse hepatocytes and mice were resistant to Orotic acid-induced lipogenesis because of little if any response in AMPK and downstream effectors [3].

Solubility Information

Solubility	DMSO: 55 mg/mL (352.34 mM), (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	6.4061 mL	32.0307 mL	64.0615 mL
5 mM	1.2812 mL	6.4061 mL	12.8123 mL
10 mM	0.6406 mL	3.2031 mL	6.4061 mL
50 mM	0.1281 mL	0.6406 mL	1.2812 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

Jung, E.J., et al, Proliferating effect of orotic acid through mTORC1 activation mediated by negative regulation of AMPK in SK-Hep1 hepatocellular carcinoma cells. J Toxicol Sci, 2012. 37(4): p. 813-21.