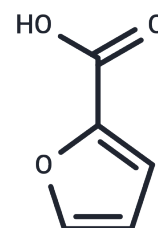


2-Furoic acid

Chemical Properties

CAS No. :	88-14-2
Formula:	C ₅ H ₄ O ₃
Molecular Weight:	112.08
Storage:	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	2-Furoic acid (Furan-2-carboxylic acid) reduces serum cholesterol and triglyceride levels and exhibits anti-lipidemic effects.
Targets(IC50)	Anti-infection,ATP Citrate Lyase,Endogenous Metabolite,Acyltransferase
In vitro	Agar that contains trace amounts of 5-HMFA and Furan-2-carboxylic acid inhibits the proliferation of some slow-growing or difficult-to-culture bacteria on the plates[1].
In vivo	2-Furoic acid selectively inhibited bone resorbing activities of osteoclasts and prevented bone loss induced by estrogen deficiency but did not affect bone formation. 2-Furoic acid, an orally active selective human cathepsin K inhibitor, may have the therapeutic potential for the treatment of diseases characterized by excessive bone loss including osteoporosis[2].
Cell Research	The inhibitory effects of 5-HMFA, FA, and a mixture of the furan-2-carboxylic acids on the swarming and swimming of <i>P. collierea</i> V5-G'5 were assayed on MW solid medium (pH 6.0) containing 0.3% washed agar. The concentrations of these compounds were determined by the concentrations found in 0.3% agar plates (1×), and a series of two fold dilutions ranging from 0.125× to 8× was tested. As 5-HMFA and FA remained in the washed agar at concentrations of 0.07 and 0.12 µg g ⁻¹ agar, respectively, the 0.3% agar medium supplemented with 0.125× furan-2-carboxylic acids, contained 0.32 ng mL ⁻¹ and 0.51 ng mL ⁻¹ FA, respectively[1].
Animal Research	When given orally twice daily for 4 weeks to 3-month-old ovariectomized (OVX) rats, Furan-2-carboxylic acid dose-dependently prevented bone loss, as monitored by bone densitometry, ash content, and urinary excretion of deoxypyridinoline. No change in serum osteocalcin in the OVX rats by Furan-2-carboxylic acid suggested that bone formation might not be affected by the agent[2].

Solubility Information

Solubility	DMSO: 45 mg/mL (401.5 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
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In vivo Formulation	10% DMSO+40% PEG300+5% Tween 80+45% Saline: 2 mg/mL (17.84 mM), Sonication is recommended. <i>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.</i>
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Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	8.9222 mL	44.611 mL	89.222 mL
5 mM	1.7844 mL	8.9222 mL	17.8444 mL
10 mM	0.8922 mL	4.4611 mL	8.9222 mL
50 mM	0.1784 mL	0.8922 mL	1.7844 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

Hara S, Isoda R, Tahvanainen T, et al. Trace Amounts of Furan-2-Carboxylic Acids Determine the Quality of Solid Agar Plates for Bacterial Culture[J]. Plos One, 2012, 7(7):e41142.

Kim, M. K . An Orally Active Cathepsin K Inhibitor, Furan-2-Carboxylic Acid, 1-(2-cyclohexyl)-amide (OST-4077), Inhibits Osteoclast Activity in Vitro and Bone Loss in Ovariectomized Rats[J]. Journal of Pharmacology and Experimental Therapeutics, 2006, 318(2):555-562.

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