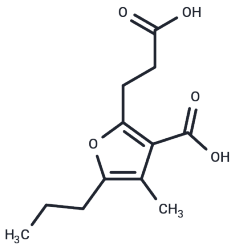
Data Sheet (Cat.No.T68490)

TargetMol

CMPF

Chemical Properties



CAS No. : 86879-39-2

Formula: C12H16O5

Molecular Weight: 240.25

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	CMPF is a microtubule protein inhibitor that can be used to study tumors.
Targets(IC50)	Microtubule Associated,Endogenous Metabolite
In vitro	CMPF is tightly bound to albumin but only moderately inhibits T4 binding in a direct manner (10-14% at 0.3 mM). However, CMPF effectively displaces competitive T4 binding molecules from albumin, such as acidic drugs and free fatty acids. Therefore, CMPF may indirectly influence T4 binding to albumin by increasing the serum concentration of competitive binding molecules, particularly free fatty acids such as oleic acid.[6]
In vivo	CMPF is highly albumin-bound and accumulates in the serum of uremic patients to concentrations in excess of 0.2 mM. Its primary effect is to inhibit cellular transport and subsequent deiodination of thyroxine (T4).[5] [6]

Solubility Information

Solubility	H2O: < 1 mg/mL (insoluble or slightly soluble) DMF: 27 mg/mL (112.38 mM),Sonication is recommended. DMSO: 27 mg/mL (112.38 mM),Sonication is recommended. Ethanol: 27 mg/mL (112.38 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: 2 mg/mL (8.32 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	4.1623 mL	20.8117 mL	41.6233 mL
5 mM	0.8325 mL	4.1623 mL	8.3247 mL
10 mM	0.4162 mL	2.0812 mL	4.1623 mL
50 mM	0.0832 mL	0.4162 mL	0.8325 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

Dai L, et al. The association between TMAO, CMPF, and clinical outcomes in advanced chronic kidney disease: results from the European QUALity (EQUAL) Study. Am J Clin Nutr. 2022;116(6):1842-1851.
Liu G, et al. Pure omega 3 polyunsaturated fatty acids (EPA, DPA or DHA) are associated with increased plasma levels of 3-carboxy-4-methyl-5-propyl-2-furanpropanoic acid (CMPF) in a short-term study in women. Food Funct. 2020;11(3):2058-2066.
Lankinen MA, et al. CMPF does not associate with impaired glucose metabolism in individuals with features of metabolic syndrome. PLoS One. 2015;10(4):e0124379.
Miao Z, et al. Furan fatty acid metabolite CMPF is associated with lower risk of type 2 diabetes, but not chronic kidney disease: a longitudinal population-based cohort study. Am J Clin Nutr. 2023;S0002-9165(23)66060-5.
Lim CF, et al. A furan fatty acid and indoxyl sulfate are the putative inhibitors of thyroxine hepatocyte transport in uremia. J Clin Endocrinol Metab. 1993;76(2):318-324.
Lim CF, et al. A naturally occurring furan fatty acid enhances drug inhibition of thyroxine binding in serum. Metabolism. 1993;42(11):1468-1474.