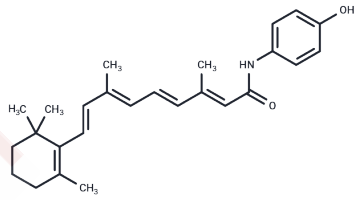
Data Sheet (Cat.No.T1872)

TargetMol

Fenretinide

Chemical Properties



CAS No. : 65646-68-6

Formula: C26H33NO2

Molecular Weight: 391.55

Storage: Keep away from direct sunlight,Keep away from moisture,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	Fenretinide (4-HPR) is an orally-active synthetic retinoid derivative with potential antineoplastic and chemopreventive activities.
Targets(IC50)	Retinoid Receptor,Autophagy
In vitro	Fenretinide demonstrates both immediate and sustained antitumor effects across several T-ALL cell lines and inhibits DES activity in CCRF-CEM leukemia cells, leading to increased endogenous cellular dhCer levels in a dose- and time-dependent manner. This includes (3 μM)-induced dhCer accumulation in CCRF-CEM and Jurkat cells [1]. Additionally, fenretinide enhances insulin signaling by protecting against ceramide-related inhibition and mitigates lipid-induced declines in insulin-stimulated glucose uptake [2]. It also effectively halts OVCAR-5 cell proliferation and viability at doses above 1 μM, achieving 70-90% growth inhibition at 10 μM, and notably impairs OVCAR-5 invasion following a 3-day preincubation period with 1 μM. Furthermore, endothelial cells exposed to 1μM 4-HPR fail to form tubular structures, instead creating small cellular clusters [4].
In vivo	Fenretinide (10 mg/kg, i.p.) selectively inhibits ceramide accumulation HFD-fed male C57Bl/6 mice. Fenretinide treatment improves glucose tolerance and insulin sensitivity as determined by both glucose and insulin tolerance tests[2]. The addition of 25 mg/kg ketoconazole to Fenretinide increased 4-HPR plasma levels in NOD/SCID mice[3].
Cell Research	Fenretinide is dissolved in DMSO. Standard XTT assay is used to determine cell viability. For fenretinide-only treatments, cells are plated in 96-well plates at 750,000 cells/mL and 100 μL/well. After 4 h, treatments are added on 50 μL/well obtaining a final density of 500,000 cells/mL and final volume of 150 μL/well. Four replicates are used per experimental condition. XTT reagent mixture is added 4 h before the end of selected treatment period and absorbance at 490 nm is determined per each well. A slightly modified protocol is used for analysis of the effect of myriocin (final concentration of 100 nM) or antioxidant on Fenretinide treatment. Briefly, cells are seeded on 60 mm culture dishes and myriocin or antioxidants added after 4 h. Fenretinide treatment is added 2 h later and cells are plated in quadruplicates in 96 well plates (150 μL/well).

Solubility Information

Solubility	DMSO: 250 mg/mL (638.49 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 (5.11 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	2.554 mL	12.7698 mL	25.5395 mL
5 mM	0.5108 mL	2.554 mL	5.1079 mL
10 mM	0.2554 mL	1.277 mL	2.554 mL
50 mM	0.0511 mL	0.2554 mL	0.5108 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

Apraiz, Aintzane., et al. Dihydroceramide accumulation and reactive oxygen species are distinct and nonessential events in 4-HPR-mediated leukemia cell death. Biochemistry and Cell Biology (2012), 90(2), 209-223.
Bikman, Benjamin T., et al. Fenretinide Prevents Lipid-induced Insulin Resistance by Blocking Ceramide Biosynthesis. Journal of Biological Chemistry (2012), 287(21), 17426-17437.
Cooper JP, et al. Fenretinide metabolism in humans and mice: utilizing pharmacological modulation of its metabolic pathway to increase systemic exposure. Br J Pharmacol. 2011 Jul;163(6):1263-75.
Golubkov V, et al. Action of fenretinide (4-HPR) on ovarian cancer and endothelial cells. Anticancer Res. 2005 Jan-Feb;25(1A):249-53.

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