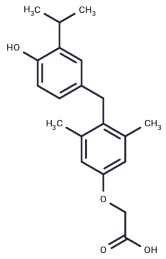
Data Sheet (Cat.No.T5313)

TargetMol

Sobetirome

Chemical Properties



CAS No. : 211110-63-3

Formula: C20H24O4

Molecular Weight: 328.4

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	Sobetirome (IACS-010759) is a selective agonist of thyroid hormone receptor β (TRβ) and binds selectively to TRβ-1 (EC50: 0.16 μM).
Targets(IC50)	Thyroid hormone receptor(THR)
In vitro	GC-1 was designed to bind selectively to TRβ (EC50: 0.58 μM for TRα-1, 0.16 μM for TRβ-1) [1]. The thyromimetic agent GC-1 induces hepatocyte proliferation via Wnt/β-catenin signaling and may promote regeneration in both acute and chronic liver insufficiencies [2].
In vivo	Four weeks following injection, mice were fed 5 mg/kgSobetirome or basal diet for 10 or 21 days. Treatment withSobetirome for 10 or 21 days led to a significant reduction in tumor burden [2].Sobetirome treatment reduced serum cholesterol levels by 25% and serum triglycerides by 75% in chow-fed mice and also attenuated diet-induced hypercholesterolemia [3].Sobetirome (50 or 100 mug/100 g body weight) strongly stimulates rat hepatocyte proliferation in the absence of tissue injury.Sobetirome also induced massive pancreatic cell proliferation [4].
Animal Research	Briefly, 20 μg of a pT3-EF5α-hMet-V5 and pT3-EF5α-S45Y-β-catenin-Myc combination along with the transposase in a ratio of 25:1 were diluted in 2 mL of normal saline (0.9% NaCl), filtered through a 0.22-μm filter, and injected into the lateral tail vein of 23 FVB mice that were around 6 weeks old, in 5 to 7 seconds. These mice are referred henceforth as hMet-mutant-β-catenin mice. Four weeks after injection, hMet-mutant-β-catenin mice were randomized into two groups. One group was kept on a basal diet (n = 12), and another group was switched to a GC-1–supplemented diet (5 mg/kg of diet) (n = 11). Animals on control diet were sacrificed at either 21 days (n = 8) or 10 days (n = 4) after initiation of the diet. Similarly, animals on the GC-1 diet were sacrificed at either 21 days (n = 7) or 10 days (n = 4) after initiation of the diet. The animals were given access to food and water ad libitum with a 12-hour light/dark daily cycle. One intraperitoneal injection of bromodeoxyuridine (BrdU) was performed on day 9 during 10 days of GC-1 or basal diet treatment, and livers were harvested 24 hours later [2].

Solubility Information

Solubility	DMSO: 145 mg/mL (441.53 mM),Sonication is recommended. Ethanol: 30 mg/mL (91.35 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+90% Saline: < 10 mg/mL (30.45 mM),Lower concentrations may be soluble, but exact solubility limit is unknown. 10% DMSO+40% PEG300+5% Tween 80+45% Saline: 10 mg/mL (30.45 mM),Solution. *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	3.0451 mL	15.2253 mL	30.4507 mL
5 mM	0.609 mL	3.0451 mL	6.0901 mL
10 mM	0.3045 mL	1.5225 mL	3.0451 mL
50 mM	0.0609 mL	0.3045 mL	0.609 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

Gierach I, et al. Bacterial biosensors for screening isoform-selective ligands for human thyroid receptors α-1 and β-1. FEBS Open Bio. 2012 Aug 15;2:247-53.
Puliga E, et al. Thyroid Hormone Receptor-β Agonist GC-1 Inhibits Met-β-Catenin-Driven Hepatocellular Cancer. Am J Pathol. 2017 Nov;187(11):2473-2485.
Johansson L, et al. Selective thyroid receptor modulation by GC-1 reduces serum lipids and stimulates steps of reverse cholesterol transport in euthyroid mice. Proc Natl Acad Sci U S A. 2005 Jul 19;102(29):10297-302.
Columbano A, et al. The thyroid hormone receptor-beta agonist GC-1 induces cell proliferation in rat liver and pancreas. Endocrinology. 2006 Jul;147(7):3211-8.