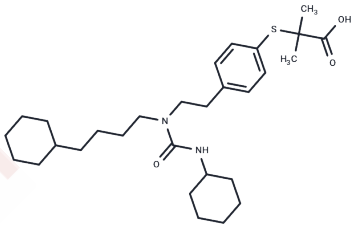
Data Sheet (Cat.No.T15453)

TargetMol

GW7647

Chemical Properties



CAS No. : 265129-71-3

Formula: C29H46N2O3S

Molecular Weight: 502.75

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	GW 7647 is an effective and highly selective PPARα agonist, the EC 50 values of human PPARα, PPARγ and PPARδ receptors are 6,1100 and 6200 nM, respectively. GW 7647 can reduce the production of nitric oxide in macrophages and has lipid-lowering and anti-inflammatory properties in the body.
Targets(IC50)	PPAR
In vitro	GW7647 at a concentration of 50 nM, promotes PI3K and Akt (Ser473) phosphorylation, leading to an increase in NOS1 phosphorylation and subsequently elevating NO levels in stripped antral mucosa. Additionally, at the same concentration, it boosts the initial phase of Ca2+-mediated exocytotic events triggered by ACh in antral mucous cells, without independently inducing any exocytotic events. At a higher concentration of 1 μM, GW7647 substantially elevates PDZK1 protein levels to 129.7 ± 6.5% compared to controls in Caco2BBE cells, irrespective of IL-1β presence, and mitigates the IL-1β-induced reduction in PDZK1 expression. When combined with ACh, GW7647 augments the impact of wortmannin (50 nM) and AKT-inh (100 nM) on exocytotic activity in these cells. At 100 nM, GW7647 significantly decreases AQP9 protein levels by 43% in WIF-B9 hepatocytes and by 24% in HepG2 cells, though it shows no notable effects at 10 and 1,000 nM in WIF-B9 hepatocytes, nor does it significantly affect L-FABP protein levels in HepG2 hepatocytes.
In vivo	GW7647 (3 mg/kg per day) does not prevent cardiac hypertrophy but preserves left ventricular ejection fraction in vivo [4].

Solubility Information

Solubility	DMSO: 81.67 mg/mL (162.45 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 (3.98 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	1.9891 mL	9.9453 mL	19.8906 mL
5 mM	0.3978 mL	1.9891 mL	3.9781 mL
10 mM	0.1989 mL	0.9945 mL	1.9891 mL
50 mM	0.0398 mL	0.1989 mL	0.3978 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

Gizard F, et al. PPAR alpha inhibits vascular smooth muscle cell proliferation underlying intimal hyperplasia by inducing the tumor suppressor p16INK4a. J Clin Invest. 2005 Nov;115(11):3228-38.
Dou X, Huo T, Liu Y, et al.Discovery of novel and selective farnesoid X receptor antagonists through structure-based virtual screening, preliminary structure-activity relationship study, and biological evaluation.European Journal of Medicinal Chemistry.2024: 116323.
Tanaka S,et al. PPARα induced NOS1 phosphorylation via PI3K/Akt in guinea pig antral mucous cells: NO-enhancement in Ca(2+)-regulated exocytosis. Biomed Res. 2016; 37(3):167-78.
Qu XX,et al. PPAR-α Agonist GW7647 Protects Against Oxidative Stress and Iron Deposit via GPx4 in a Transgenic Mouse Model of Alzheimer's Diseases. ACS Chem Neurosci. 2022 Jan 19; 13(2):207-216.
Foreman JE,et al. Diminished Hepatocarcinogenesis by a Potent, High-Affinity Human PPARα Agonist in PPARA-Humanized Mice. Toxicol Sci. 2021 Aug 30; 183(1):70-80.
Brown PJ, et al. Identification of a subtype selective human PPARalpha agonist through parallel-array synthesis. Bioorg Med Chem Lett. 2001 May 7;11(9):1225-7.