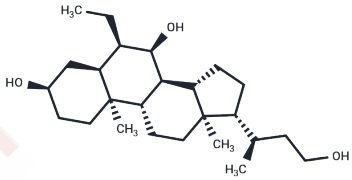
Data Sheet (Cat.No.TQ0252)

TargetMol

BAR502

Chemical Properties



CAS No. : 1612191-86-2

Formula: C25H44O3

Molecular Weight: 392.62

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	BAR502 is a dual GPBAR1 and FXR agonist (IC50s: 0.4 μM and 2 μM).
Targets(IC50)	FXR,Autophagy,GPCR19
In vitro	At the concentration of 10 μM, BAR502 fails to transactivate GR, PPARγ, and LXR, respectively, but it transactivates the nuclear receptor PXR. BAR502 is able to induce the expression of proglucagon mRNA in GLUTAg cells, an intestinal endocrine cell line, as well as to increase cAMP concentrations in THP-1 cells. BAR502 induces the expression of OSTα, BSEP, and SHP in HepG2 cells. BAR502 shows very potent activity in the recruitment of SRC-1 coactivator and high affinity to FXR [1].
In vivo	In non-obstructive cholestasis models, BAR502 mitigates liver damage without inducing itching. Concurrently, BAR502 enhances survival, lowers serum alkaline phosphatase levels, and significantly alters the liver's expression of key FXR target genes such as OSTα, BSEP, SHP, and MDR1, without causing pruritus. Furthermore, BAR502 treatment results in a 10% body weight reduction, heightened insulin sensitivity, increased HDL levels, and decreased liver steatosis, inflammation, fibrosis scores, and the expression of liver genes like SREPB1c, FAS, PPARγ, CD36, and CYP7A1 mRNA. It also elevates SHP and ABCG5 expression in the liver, alongside SHP, FGF15, and GLP1 in the intestine. Additionally, BAR502 fosters epWAT browning and curtails CCl4-induced liver fibrosis.
Animal Research	C57BL6 mice 24 weeks old are fed a high-fat diet containing 60% kj fat and fructose in drinking water (42?g/L) or normal diet (6 mice) for 18 weeks. After 10 weeks of HFD, mice are randomized to receive HFD alone (9 mice) or HFD plus BAR502 (15?mg/kg/day) body weight by gavage (9 mice) for 8 weeks. Mice are housed under controlled temperatures (22?°C) and photoperiods (12:12-hour light/dark cycle), allowed unrestricted access to standard mouse chow and tap water and allowed to acclimate to these conditions for at least 5 days before inclusion in an experiment [3].

Solubility Information

Solubility	DMF: 48 mg/mL (122.26 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.547 mL	12.735 mL	25.4699 mL
5 mM	0.5094 mL	2.547 mL	5.094 mL
10 mM	0.2547 mL	1.2735 mL	2.547 mL
50 mM	0.0509 mL	0.2547 mL	0.5094 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

Festa C, et al. Exploitation of cholane scaffold for the discovery of potent and selective farnesoid X receptor (FXR) and G-protein coupled bile acid receptor 1 (GP-BAR1) ligands. J Med Chem. 2014 Oct 23;57(20):8477-95.
Cipriani S, et al. Impaired Itching Perception in Murine Models of Cholestasis Is Supported by Dysregulation of GPBAR1 Signaling. PLoS One. 2015 Jul 15;10(7):e0129866.
Carino A, et al. BAR502, a dual FXR and GPBAR1 agonist, promotes browning of white adipose tissue and reverses liver steatosis and fibrosis. Sci Rep. 2017 Feb 16;7:42801.