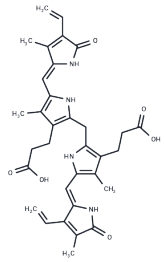
Data Sheet (Cat.No.T2934)

TargetMol

Bilirubin

Chemical Properties



CAS No. : 635-65-4

Formula: C33H36N4O6

Molecular Weight: 584.66

Storage: Store at low temperature,Keep away from direct sunlight
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	Bilirubin (Principal bile pigment) is a type of bile pigment, which is a metabolite of hemoglobin in the blood. Bilirubin has antimutagenic and antioxidant effects. Bilirubin is an important basis for clinical determination of jaundice, and is also an important indicator of liver function.
Targets(IC50)	Endogenous Metabolite
In vitro	**METHODS**: Hippocampal primary neurons were treated with Bilirubin (12-25 μM) for 24 h. Mitochondrial membrane potential (ΔΨm) was measured by JC-1 fluorescence staining. **RESULTS**: Bilirubin treatment decreased ΔΨm in a dose-dependent manner. [1] **METHODS**: Neural stem cell NSC were treated with Bilirubin (6.25-50 μM) for 96 h. Cell viability was measured by MTT assay. **RESULTS**: Cell viability was significantly reduced after exposure to 50 μM Bilirubin concentration. The viability of cells exposed to Bilirubin was gradually and significantly reduced. [2]
In vivo	**METHODS**: To investigate the effects on atherosclerosis, Bilirubin (30 mg/kg, 50 mmol/L of K3PO4 plus 10% serum) was administered intraperitoneally to Ldlr-/- mice on Western diet once daily for eight weeks. **RESULTS**: Bilirubin prevented atherosclerotic plaque formation but did not alter circulating cholesterol or chemokine levels. Bilirubin-treated animals had reduced lipid and collagen deposition in the aortic root, decreased monocyte and lymphocyte infiltration, fewer smooth muscle cells, decreased levels of chlorotyrosine and nitrotyrosine, and no changes in VCAM-1 or ICAM-1 expression. [3]

Solubility Information

Solubility	DMSO: 9 mg/mL (15.39 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	1.7104 mL	8.552 mL	17.104 mL
5 mM	0.3421 mL	1.7104 mL	3.4208 mL
10 mM	0.171 mL	0.8552 mL	1.7104 mL
50 mM	0.0342 mL	0.171 mL	0.3421 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

Huang H, et al. Bilirubin neurotoxicity is associated with proteasome inhibition. Cell Death Dis. 2017 Jun 15;8(6): e2877.

Zhang S, Fan Y, Zheng B, et al. Bilirubin Improves Gap Junction to Alleviate Doxorubicin-Induced Cardiotoxicity by Regulating AMPK-Axl-SOCS3-Cx43 Axis. Frontiers in Pharmacology. 2022, 13

Shan Z, Yang X, Liu H, et al.Cryo-EM structures of human organic anion transporting polypeptide OATP1B1.Cell Research.2023: 1-12.

Capková N, et al. The Effects of Bilirubin and Lumirubin on the Differentiation of Human Pluripotent Cell-Derived Neural Stem Cells. Antioxidants (Basel). 2021 Sep 27;10(10):1532.

Vogel ME, et al. Bilirubin Prevents Atherosclerotic Lesion Formation in Low-Density Lipoprotein Receptor-Deficient Mice by Inhibiting Endothelial VCAM-1 and ICAM-1 Signaling. J Am Heart Assoc. 2017 Apr 1;6(4):e004820.