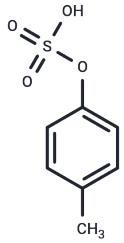
Data Sheet (Cat.No.T21977)

TargetMol

p-Cresyl sulfate

Chemical Properties



CAS No. : 3233-58-7

Formula: C7H8O4S

Molecular Weight: 188.20

Storage: 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	p-Cresyl Sulfate is the major uremic toxin present in the blood of patients with chronic kidney disease and is derived from the metabolites of tyrosine and phenylalanine in the liver.
Targets(IC50)	Others,Endogenous Metabolite,JNK,p38 MAPK,ROS
In vitro	**METHODS**: H9C2 cardiomyocytes were treated with p-Cresyl Sulfate (3.125, 6.25, 12.5, 25.0 μg/mL) to study the changes in cell proliferation, cell size and mitochondrial parameters, including morphology, respiration, biogenesis and membrane potential. **RESULTS** The lowest effective dose of p-Cresyl Sulfate (6.25 μg/mL) induced mitochondrial hypertransfusion, enhanced mitochondrial connectivity, increased mitochondrial oxygen consumption rate, mitochondrial mass, mitochondrial DNA copy number and cardiomyocyte volume; at the same time, p-Cresyl Sulfate increased the phosphorylation of energy-sensing adenosine monophosphate-activated protein kinase (AMPK), but did not induce cell apoptosis. [2]
In vivo	**METHODS**: Mice with AKI induced by ischemia and reperfusion (IR) injury were treated with p-Cresyl Sulfate (20, 40, or 60 mg/L/day for 15 days) to evaluate the effects of p-Cresyl Sulfate administration on renal and cardiac function. **RESULTS** p-Cresyl Sulfate at a dose of 20 mg/L resulted in decreased renal mass, increased cystatin C and kidney injury molecule 1 (KIM-1) gene expression, and decreased α-actin in the heart. [3]

Solubility Information

Solubility	DMSO: 250.00 mg/mL (1328.37 mM),Sonication is recommended. H2O: 100.00 mg/mL (531.35 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: 5.00 mg/mL (26.57 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	5.3135 mL	26.5675 mL	53.135 mL
5 mM	1.0627 mL	5.3135 mL	10.627 mL
10 mM	0.5313 mL	2.6567 mL	5.3135 mL
50 mM	0.1063 mL	0.5313 mL	1.0627 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

Gryp T, et al. p-Cresyl Sulfate. Toxins (Basel). 2017 Jan 29;9(2):52.
Huang TH, et al. P-cresyl sulfate causes mitochondrial hyperfusion in H9C2 cardiomyoblasts. J Cell Mol Med. 2020 Aug;24(15):8379-8390.
Falconi CA, et al. Renocardiac Effects of p-Cresyl Sulfate Administration in Acute Kidney Injury Induced by Unilateral Ischemia and Reperfusion Injury In Vivo. Toxins (Basel). 2023 Nov 10;15(11):649.
Peng YS, et al. BSA-bounded p-cresyl sulfate potentiates the malignancy of bladder carcinoma by triggering cell migration and EMT through the ROS/Src/FAK signaling pathway. Cell Biol Toxicol. 2020 Aug;36(4):287-300.