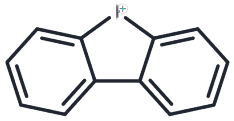
Data Sheet (Cat.No.T7191)

TargetMol

Diphenyleneiodonium chloride

Chemical Properties



CAS No. : 4673-26-1

Formula: C12H8ClI

Molecular Weight: 314.55

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	Diphenyleneiodonium chloride (DPI)(DPI) is an irreversible inhibitor of iNOS and eNOS (IC50 values of 50 nM and 0.3 μM, respectively),and displays broad-spectrum bactericidal activity.
Targets(IC50)	NOS,Reactive Oxygen Species,NADPH,ROS,TRP/TRPV Channel
In vitro	Diphenyleneiodonium chloride (DPIC), an NADPH/NADH oxidase inhibitor, as possessing potent antimicrobial activity against non-tuberculous mycobacteria.?DPIC exhibited concentration-dependent bactericidal activity against M. fortuitum and synergized with amikacin, ceftriaxone, ceftazidime and meropenem[1].
Cell Research	Whole-cell growth inhibition assays were used to screen and identify novel inhibitors. The hit compounds(Diphenyleneiodonium chloride) were tested for cytotoxicity against Vero cells to determine the selectivity index, and time-kill kinetics were determined against Mycobacterium fortuitum. The compound's ability to synergize with amikacin, ceftriaxone, ceftazidime and meropenem was determined using fractional inhibitory concentration indexes followed by its ability to decimate mycobacterial infections ex vivo[1].

Solubility Information

Solubility	DMSO: 6 mg/mL (19.07 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	3.1791 mL	15.8957 mL	31.7914 mL
5 mM	0.6358 mL	3.1791 mL	6.3583 mL
10 mM	0.3179 mL	1.5896 mL	3.1791 mL
50 mM	0.0636 mL	0.3179 mL	0.6358 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

Singh A K , Thakare R , Karaulia P , et al. Biological evaluation of diphenyleneiodonium chloride (DPIC) as a potential drug candidate for treatment of non-tuberculous mycobacterial infections[J]. Journal of Antimicrobial Chemotherapy, 2017.

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Tao L, Liu Z, Li X, et al.Oleanonic acid ameliorates mutant Aβ precursor protein-induced oxidative stress, autophagy deficits, ferroptosis, mitochondrial damage, and ER stress in vitro.Biochimica et Biophysica Acta (BBA)-Molecular Basis of Disease.2024: 167459.

Stuehr D J , Fasehun O A , Kwon N S , et al. Inhibition of macrophage and endothelial cell nitric oxide synthase by diphenyleneiodonium and its analogs.[J]. The FASEB Journal, 1991, 5(1):98-103.

Ning Y, Chen Y, Tian T, et al.S100A7 Orchestrates Neutrophil Chemotaxis and Drives Neutrophil Extracellular Traps (NETs) Formation to Facilitate Lymph Node Metastasis in Cervical Cancer Patients.Cancer Letters.2024: 217288.