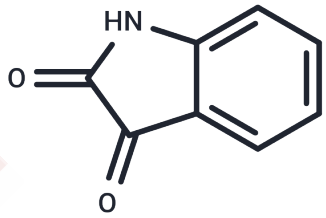
Data Sheet (Cat.No.T6862)

TargetMol

Isatin

Chemical Properties



CAS No. : 91-56-5

Formula: C8H5NO2

Molecular Weight: 147.13

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	Isatin (2,3-Indolinedione) is an endogenous MAO inhibitor.
Targets(IC50)	Apoptosis,MAO,Monoamine Oxidase
In vitro	Isatin induces apoptosis of MCF-7 cells. Bcl-2 expression is decreased and the ratio of Bcl-2 to Bax is significantly decreased by isatin. The mitochondrial transmembrane potential is markedly decreased and the release of cytochrome c into the cytosol is elevated following treatment with isatin. At the same time, caspase-9 and -3 are stimulated, followed by the degradation of ICAD, a caspase-3 substrate. Isatin and its analogs inhibits the proliferation of some cancer cells, including colon HT29, breast MCF-7, lung A549 and melanoma UACC903 cells and is a dual inhibitor of tubulin polymerization and the Akt pathway[4].
In vivo	Isatin is an endogenous indole that is increased in stress, inhibits monoamine oxidase (MAO) B and improves bradykinesia and striatal dopamine levels in rat models of Parkinson's disease. Isatin has a distinct and discontinuous distribution in rat brain and other tissues; the highest concentrations in the brain are found in the hippocampus and cerebellum. In rodent models isatin has been shown to cause a widespectrum of dose-dependent physiological and biological actions, such as anxiogenic and sedative effects, memory dysfunction and inhibition of food and water intake. Significantly, isatin readily crosses the blood-brain barrier so that a peritoneal dose of 100 mg/kg would result in a concentration of about 120 μM in the rat brain. This concentration would increase further with repeated injections[2].
Cell Research	Cell viability was estimated by a colorimetric method, which is based on the ability of cellular dehydrogenases of viable cells to reduce MTT from a yellow watersoluble dye to a dark blue insoluble formazan product. SHSY5Y cells were seeded in 96-well plates at 4×104 cells/well/(100 ml) and allowed to attach. The cells were then treated with isatin and returned to the incubator for 24 or 48 h. MTT 25 μl (5 mg/ml) was added to all wells and allowed to incubate in the dark at 37°C for 2 h followed by cell lysis. The plates were read with an OPTImax microplate reader at wavelength of 562 nm. Controls included untreated cells and medium alone, with all MTT assays performed in triplicate.(Only for Reference)

Solubility Information

Solubility	Ethanol: 10 mg/mL (67.97 mM),Sonication is recommended. H2O: < 1 mg/mL (insoluble or slightly soluble), DMSO: 60 mg/mL (407.8 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+90% Saline: 2.5 mg/mL (16.99 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	6.7967 mL	33.9836 mL	67.9671 mL
5 mM	1.3593 mL	6.7967 mL	13.5934 mL
10 mM	0.6797 mL	3.3984 mL	6.7967 mL
50 mM	0.1359 mL	0.6797 mL	1.3593 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

Naoya Hamaue, et al. CNS Drug Reviews. 1999, 5(4):331-346.
Igosheva N, et al. Neurochem Int. 2005, 47(3):216-24.
Hamaue N, et al. Neurotoxicology. 2004, 25(1-2):205-13.
Ma Z, et al. Oncol Rep. 2014, 32(5):2111-7.