Data Sheet (Cat.No.TN1375)

TargetMol

α-Lapachone

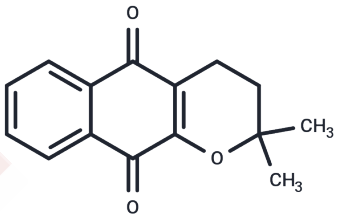
Chemical Properties

CAS No. : 4707-33-9

Formula: C15H14O3

Molecular Weight: 242.27

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	α-Lapachone has antineoplastic activity, it shows an approximately trypanocidal activity against Trypanosoma cruzi.
Targets(IC50)	Parasite,Antifection,Topoisomerase
In vitro	The photophysical and photochemical reactions of β-lapachone were studied using femtosecond transient absorption, nanosecond transient absorption, and nanosecond time-resolved resonance Raman spectroscopy techniques and density functional theory calculations. In acetonitrile, β-lapachone underwent an efficient intersystem crossing to form the triplet state of β-lapachone. However, in water-rich solutions, the singlet state of β-lapachone was predominantly quenched by the photoinduced protonation of the carbonyl group at the β position (O9). After protonation, a series of fast reaction steps occurred to eventually generate the triplet state α±-lapachone intermediate. This triplet state of α±-lapachone then underwent intersystem crossing to produce the ground singlet state of α±-lapachone as the final product. 1,2-Naphthoquinone is examined in acetonitrile and water solutions in order to elucidate the important roles that water and the pyran ring play during the photoconversion from β-lapachone to α±-lapachone. β-Lapachone can also be converted to α±-lapachone in the ground state when a strong acid is added to an aqueous solution[1]

Solubility Information

Solubility	DMSO: 50 mg/mL (206.38 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	4.1276 mL	20.6381 mL	41.2763 mL
5 mM	0.8255 mL	4.1276 mL	8.2553 mL
10 mM	0.4128 mL	2.0638 mL	4.1276 mL
50 mM	0.0826 mL	0.4128 mL	0.8255 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

Photoconversion of β-Lapachone to α±-Lapachone via a Protonation-Assisted Singlet Excited State Pathway in Aqueous Solution: A Time-Resolved Spectroscopic Study.J Org Chem. 2015 Aug 7;80(15):7340-50.