Data Sheet (Cat.No.TN1375)

TargetMol
A DRUG SCREENING EXPERT

alpha-Lapachone

Chemical Properties

CAS No.:	4707-33-9
Formula:	C15H14O3
Molecular Weight:	242.3
Appearance:	N/A
Storage:	0-4℃ for short term (days to weeks), or -20℃ for long term (months).

Biological Description

Description	alpha-Lapachone has antineoplastic activity, it shows an approximately trypanocidal activity against Trypanosoma cruzi.
Targets(IC_{50})	Topoisomerase: None Antifection: None
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	< 1 mg/ml refers to the product slightly soluble or insoluble

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	4.127 mL	20.636 mL	41.271 mL
5 mM	0.825 mL	4.127 mL	8.254 mL
10 mM	0.413 mL	2.064 mL	4.127 mL
50 mM	0.083 mL	0.413 mL	0.825 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. The storage conditions and period of the stock solution: - 80 ℃ for 6 months; - 20 ℃ for 1 month. Please use it as soon as possible.

Reference

1. 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.

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