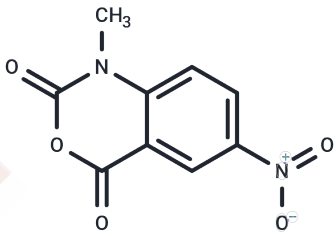
Data Sheet (Cat.No.T29303)

TargetMol

1M6

Chemical Properties



CAS No. : 4693-01-0

Formula: C9H6N2O5

Molecular Weight: 222.15

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	1M6 (1-Methyl-6-nitroisatoic anhydride) is a SHAPE reagent for the detection of RNA chemical structures.
Targets(IC50)	Others
In vitro	I. SHAPE experiment 1. RNA sample preparation: Extract and purify the target RNA sample to ensure that it is not contaminated and can be stably present in the SHAPE experiment. 2. Reagent reaction: Dissolve 1M6 in an appropriate solvent (such as water or buffer) and add it to the RNA sample. Usually, the reaction is carried out at room temperature, and the time can be adjusted according to the experimental design (usually 10-30 minutes). 3. RNA modification: 1M6 reacts with the exposed 2'-OH hydroxyl group in the RNA molecule to form a modified RNA molecule. These modified RNA fragments can be analyzed by different sequencing technologies (such as high-throughput sequencing). 4. Analysis: Analyze RNA modification data, use SHAPE data to generate a structural model of RNA, predict its secondary structure or explore its interaction with other molecules. II. Study RNA structure and function 1. RNA secondary structure analysis: Use 1M6 to modify the RNA sample, and infer the secondary structure of RNA by analyzing the location of the modification. 2. Interaction study: Combine other experimental methods (such as affinity chromatography or electrophoresis) to study the interaction between RNA and other molecules (such as proteins, small molecule ligands) and evaluate the effects of these interactions on RNA structure. III. RNA folding dynamics study 1. Dynamic experiment: By adding 1M6 at different time points, the structural changes of different regions of RNA during the folding process are marked. Combined with real-time sequencing technology, the process and intermediates of RNA folding are studied. 2. Temperature gradient experiment: React under different temperature conditions to evaluate the stability of RNA under different thermodynamic conditions. IV. RNA binding to small molecules study 1. Binding with small molecules: Add small molecules to RNA samples, label them with 1M6, and analyze RNA structural changes. 2. Comparative analysis: By comparing the modification data of 1M6 in untreated and

In vitro	small molecule-treated RNA samples, the structural region that binds to the small molecule is identified. The above information is based on published literature. Experimental procedures should be appropriately modified to meet specific research demands.

Solubility Information

Solubility	DMSO: 50 mg/mL (225.07 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: 2.5 mg/mL (11.25 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	4.5015 mL	22.5073 mL	45.0146 mL
5 mM	0.9003 mL	4.5015 mL	9.0029 mL
10 mM	0.4501 mL	2.2507 mL	4.5015 mL
50 mM	0.090 mL	0.4501 mL	0.9003 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

Busan S, et al. Guidelines for SHAPE Reagent Choice and Detection Strategy for RNA Structure Probing Studies. Biochemistry. 2019 Jun 11;58(23):2655-2664.
Rice GM,et al. SHAPE analysis of small RNAs and riboswitches. Methods Enzymol. 2014;549:165-87.
Steen KA, Rice GM, Weeks KM. Fingerprinting noncanonical and tertiary RNA structures by differential SHAPE reactivity. J Am Chem Soc. 2012 Aug 15;134(32):13160-3.
Nwachokor J, Tawfik O, Danley M, Mathur S, House J, Sharma P, Christenson LK, Bansal A. Quantitation of spatial and temporal variability of biomarkers for Barrett's Esophagus. Dis Esophagus. 2017 Sep 1;30(9):1-8. doi: 10.1093/dote/dox023. PubMed PMID: 28859356.