Data Sheet (Cat.No.T64878)

TargetMol

2-O-Methylcytosine

Chemical Properties

CAS No. : 3289-47-2

Formula: C5H7N3O

Molecular Weight: 125.129

Storage: Keep away from direct sunlight
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	2-O-Methylcytosine is an O-alkylated DNA adduct and is recognized as a damaged nucleobase. As an analogue of cytosine, it acts as a human endogenous metabolite. The presence of 2-O-Methylcytosine can alter the structural stability and base-pairing properties of DNA. The accumulation of such damaged nucleobases is closely linked to the induction of DNA mutations, which may result in various diseases, including cancer.
Targets(IC50)	Endogenous Metabolite,DNA/RNA Synthesis
In vitro	In vitro molecular studies and gas-phase property comparisons indicate that 2-O-Methylcytosine, as a damaged nucleobase, exhibits different hydrogen bonding preferences compared to natural cytosine. This alteration may lead to mismatches during DNA replication, thereby inducing genetic mutations and potentially resulting in oncogenic transformation [1].

Solubility Information

Solubility	DMSO: 48.00 mg/mL (383.60 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	7.9917 mL	39.9584 mL	79.9169 mL
5 mM	1.5983 mL	7.9917 mL	15.9834 mL
10 mM	0.7992 mL	3.9958 mL	7.9917 mL
50 mM	0.1598 mL	0.7992 mL	1.5983 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

Aliakbar Tehrani Z, et al. Comparison of gas phase intrinsic properties of cytosine and thymine nucleobases with their O-alkyl adducts: different hydrogen bonding preferences for thymine versus O-alkyl thymine. J Mol Model. 2013;19(8):2993-3005.