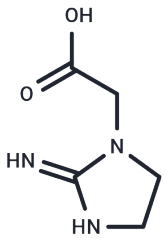
Data Sheet (Cat.No.T40445)

TargetMol

Cyclocreatine

Chemical Properties



CAS No. : 35404-50-3

Formula: C5H9N3O2

Molecular Weight: 143.14

Storage: Keep away from direct sunlight,Store at low temperature
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	Cyclocreatine, a creatine analogue and substrate for creatine kinase, inhibits creatine metabolism and prostate cancer cell proliferation, improving cognitive, autistic and epileptic phenotypes in mouse models of creatine transporter deficiency (CTD).
Targets(IC50)	ATPase,Others
In vitro	**Methods**: PC3 CL1 cells were treated with Cyclocreatine (0-50 mM, 24 hours), and the effects of Cyclocreatine on creatine uptake and metabolism were investigated using 13C1-creatine tracing technology. **Results**: Isotope tracing demonstrated that Cyclocreatine dose-dependently inhibited the uptake of 13C-creatine and the production of its metabolites, 13C-creatinine and 13C-phosphocreatine.
In vivo	**Methods**: Dissolve 1% Cyclocreatine in drinking water and provide it to Pten Spry2pc-/- mice for free consumption over a period of 1 month to observe the effect of Cyclocreatine on prostate tumor growth in these mice. **Results**: After Cyclocreatine treatment, the proliferation of prostate tumors in mice was significantly reduced, and the proportion of Ki67-positive cells markedly decreased.

Solubility Information

Solubility	DMSO: < 0.7 mg/mL (insoluble) H2O: 4 mg/mL (27.94 mM),Sonication is recommended. 1M HCl: 80 mg/mL (558.89 mM),when pH is adjusted to 2 with HCl. Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	PBS: 10 mg/mL (69.86 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	6.9862 mL	34.9308 mL	69.8617 mL
5 mM	1.3972 mL	6.9862 mL	13.9723 mL
10 mM	0.6986 mL	3.4931 mL	6.9862 mL
50 mM	0.1397 mL	0.6986 mL	1.3972 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

Salwa A Elgebaly, et al. Cyclocreatine protects against ischemic injury and enhances cardiac recovery during early reperfusion. Expert Rev Cardiovasc Ther. 2019 Sep;17(9):683-697.
Tyler K Ulland, et al. TREM2 Maintains Microglial Metabolic Fitness in Alzheimer's Disease. Cell. 2017 Aug 10;170 (4):649-663.e13.
Patel R, et al. Cyclocreatine Suppresses Creatine Metabolism and Impairs Prostate Cancer Progression[J]. Cancer Res. 2022 Jul 18;82(14):2565-2575.