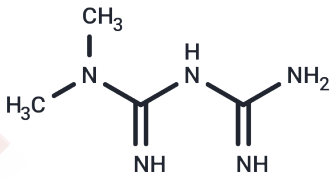
Data Sheet (Cat.No.T8526)

TargetMol

Metformin

Chemical Properties



CAS No. : 657-24-9

Formula: C4H11N5

Molecular Weight: 129.16

Storage: Store at low temperature,Keep away from direct sunlight,Store under nitrogen
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	Metformin (1,1-Dimethylbiguanide) is an AMPK activator with blood-brain barrier permeability. Metformin may improve glycemic control by increasing insulin sensitivity and decreasing intestinal glucose uptake, and is commonly used in type 2 diabetes research.
Targets(IC50)	Apoptosis,Mitophagy,AMPK,Autophagy,mTOR
In vitro	**METHODS**: Ovarian cancer cells A2780 and SKOV3 were treated with Metformin (0.001-50 mM) for 24-48 h. Cell viability was assayed using the MTS **RESULTS**: Micromolar concentrations of Metformin did not statistically reduce the viability of the A2780 or SKOV3 cell lines. At 48 h, millimolar concentrations resulted in cell death. [1] **METHODS**: Human colorectal cancer cells HCT29 were treated with Metformin (0.6 mM) for 90 h. Cell motility was detected using the wound healing assay and chamber invasion assay. **RESULTS**: Metformin inhibited the migration and invasion of HCT29 cells, and Metformin decreased the motility of tumor cells. [2]
In vivo	**METHODS**: To model Metformin-induced diarrhea, Metformin (125-500 mg/kg) was administered orally to healthy and diabetic obese db/db C57BL/6J mice twice daily for thirteen days. **RESULTS**: Metformin at 1000 mg/kg/day significantly increased fecal water content. Although no diarrhea symptoms were observed in healthy C57BL/6J mice, the same dose of Metformin induced severe diarrhea in diabetic obese db/db mice. [3] **METHODS**: To investigate the protective effect of Metformin in radiation injury, Metformin (200 mg/kg once daily for three days) was administered orally to BALB/c mice, which were then exposed to 6-8 Gy of gamma radiation. **RESULTS**: When administered prior to exposure to radiation, Metformin prolonged the survival of mice exposed to 8 Gy-TBI and increased the survival of mice exposed to 6 Gy-TBI. Pretreatment with Metformin attenuated radiation damage. [4]

Solubility Information

Solubility	DMSO: 49 mg/mL (379.37 mM),Sonication and heating are recommended. H2O: 100 mg/mL (774.23 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 mg/mL (15.48 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	7.7423 mL	38.7117 mL	77.4234 mL
5 mM	1.5485 mL	7.7423 mL	15.4847 mL
10 mM	0.7742 mL	3.8712 mL	7.7423 mL
50 mM	0.1548 mL	0.7742 mL	1.5485 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

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