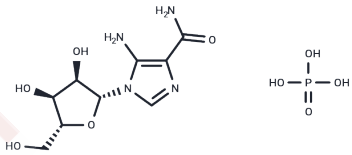
Data Sheet (Cat.No.T14149)

TargetMol

AICAR phosphate

Chemical Properties



CAS No. : 681006-28-0

Formula: C9H14N4O5.xH3O4P

Molecular Weight: 356.228

Storage: Keep away from moisture
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	AICAR phosphate (Acadesine phosphate) is an AMPK activator and inhibitor of autophagy, YAP, and mitophagy. It serves as an adenosine analog, regulating glucose and lipid metabolism, and inhibiting the production of pro-inflammatory cytokines and iNOS.
Targets(IC50)	Mitophagy,NOS,Endogenous Metabolite,AMPK,Autophagy,YAP
In vitro	HepG2 cells were treated with different concentrations of AICAR phosphate (0.1-1.0 mM) for 12, 24, and 48 hours, respectively. The final results demonstrated that AICAR phosphate reduced the expression of the insulin receptor protein[1].
In vivo	Male 5-week-old ZDF rats were either subcutaneously injected with a single dose of AICAR phosphate (0.5 mg/g) or subjected to a single bout of treadmill running. The results showed that compared to untreated control ZDF rats, both the exercise group and the rats receiving AICAR phosphate injection exhibited significantly increased AMPK-α2 activity in the white gastrocnemius muscle[2].

Solubility Information

Solubility	DMSO: 75.00 mg/mL (210.54 mM),Sonication is recommended. H2O: 80.00 mg/mL (224.58 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: 2.00 mg/mL (5.61 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	2.8072 mL	14.0359 mL	28.0718 mL
5 mM	0.5614 mL	2.8072 mL	5.6144 mL
10 mM	0.2807 mL	1.4036 mL	2.8072 mL
50 mM	0.0561 mL	0.2807 mL	0.5614 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

Nakamaru K, et al. AICAR, an activator of AMP-activated protein kinase, down-regulates the IR expression in HepG2 cells. Biochem Biophys Res Commun. 2005 Mar 11;328(2):449-54

Pold R, et al. Long-term AICAR administration and exercise prevents diabetes in ZDF rats.Diabetes. 2005 Apr;54(4): 928-34.

Drake JC, et al. AICAR treatment for 14 days normalizes obesity-induced dysregulation of TORC1 signaling and translational capacity in fasted skeletal muscle. Am J Physiol Regul Integr Comp Physiol. 2010 Dec;299(6):R1546-54.

Pold R, et al. Long-term AICAR administration and exercise prevents diabetes in ZDF rats.Diabetes. 2005 Apr;54(4): 928-34.

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