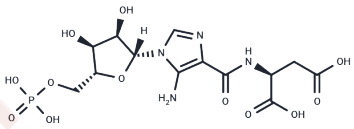
Data Sheet (Cat.No.T16837)

TargetMol

SAICAR

Chemical Properties



CAS No. : 3031-95-6

Formula: C13H19N4O12P

Molecular Weight: 454.28

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	SAICAR, an intermediate of de novo purine nucleotide biosynthesis, selectively activates pyruvate kinase isoform M2 (PKM2) with an EC50 of 0.3 mM.
Targets(IC50)	Others,Endogenous Metabolite
In vitro	Upon glucose starvation, the concentration of cellular SAICAR oscillates and enhances PKM2 activity in cancer cells, facilitating survival under glucose-limited conditions. This interaction between SAICAR and PKM2 is crucial, as cancer cells with higher levels of SAICAR (such as adsl-kd cells or those overexpressing PAICS) demonstrate improved survival, whereas cells deficient in PAICS (paics-kd cells) exhibit earlier mortality compared to controls (control-kd cells). Furthermore, the SAICAR-PKM2 complex is instrumental in phosphorylating and activating Erk1/2, thereby increasing PKM2's affinity for SAICAR through subsequent phosphorylation. This complex is also essential for continuous Erk1/2 activation and for promoting mitogen-induced cell proliferation, underscoring the importance of the SAICAR-PKM2 interaction in inducing H3 T11 and Erk1/2 phosphorylation, thereby facilitating cancer cell survival and proliferation in environments with limited glucose availability.

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.2013 mL	11.0064 mL	22.0129 mL
5 mM	0.4403 mL	2.2013 mL	4.4026 mL
10 mM	0.2201 mL	1.1006 mL	2.2013 mL
50 mM	0.044 mL	0.2201 mL	0.4403 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

Keller KE, et al. SAICAR induces protein kinase activity of PKM2 that is necessary for sustained proliferative signaling of cancer cells. Mol Cell. 2014 Mar 6;53(5):700-9.
Keller KE, et al. SAICAR stimulates pyruvate kinase isoform M2 and promotes cancer cell survival in glucose-limited conditions. Science. 2012 Nov 23;338(6110):1069-72.

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