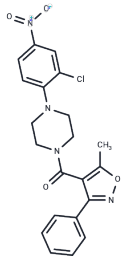
Data Sheet (Cat.No.T7330)

TargetMol

Nucleozin

Chemical Properties



CAS No. : 341001-38-5

Formula: C21H19ClN4O4

Molecular Weight: 426.85

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	Nucleozin targets influenza A nucleoprotein (NP), a multifunctional, RNA-binding protein necessary for virus replication.
Targets(IC50)	Influenza Virus
In vitro	Nucleozin blocked the cytoplasmic trafficking of ribonucleoproteins (RNPs) that had undergone nuclear export, promoting the formation of large perinuclear aggregates of RNPs along with cellular Rab11. This effect led to the production of much reduced amounts of often markedly smaller virus particles. The primary target of nucleozin is the viral RNP. IAV replication can be effectively inhibited by blocking cytoplasmic trafficking of the viral genome[1].
In vivo	Nucleozin, that triggers the aggregation of NP and inhibits its nuclear accumulation. Nucleozin impeded influenza A virus replication in vitro with a nanomolar median effective concentration (EC(50)) and protected mice challenged with lethal doses of avian influenza A H5N1. Viral NP is a valid target for the development of small-molecule therapies[2].
Cell Research	For live imaging, cells were grown in chambered glass bottom dishes and maintained at 37°C in L-15 CO2-independent medium (Gibco) during analysis. Cells were transfected with GFP-NP and infected with PR8 12 h later. For nucleozin treatment, images were acquired for 5 min and then nucleozin was added to a final concentration of 2 μM before imaging for around 20 to 30 min . Images were acquired at 0.25 or 0.71 frame/s and processed with ImageJ[1].

Solubility Information

Solubility	DMSO: 28.66 mg/mL (67.14 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 (4.69 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	2.3427 mL	11.7137 mL	23.4274 mL
5 mM	0.4685 mL	2.3427 mL	4.6855 mL
10 mM	0.2343 mL	1.1714 mL	2.3427 mL
50 mM	0.0469 mL	0.2343 mL	0.4685 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

Amorim M J , Kao R Y , Digard P . Nucleozin Targets Cytoplasmic Trafficking of Viral Ribonucleoprotein-Rab11 Complexes in Influenza A Virus Infection[J]. Journal of Virology, 2013, 87(8):4694-4703.
Zhao, Ming, et al. GCG inhibits SARS-CoV-2 replication by disrupting the liquid phase condensation of its nucleocapsid protein. Nature Communications. 2021 Apr 9;12(1):2114. doi: 10.1038/s41467-021-22297-8.
Kao R Y , Yang D , Lau L S , et al. Identification of influenza A nucleoprotein as an antiviral target[J]. Nature Biotechnology, 2010, 28(6):600-605.
Zhao, Ming, et al. GCG inhibits SARS-CoV-2 replication by disrupting the liquid phase condensation of its nucleocapsid protein. Nature Communications . 12.1 (2021): 1-14.