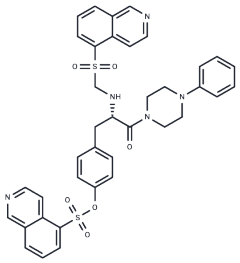
Data Sheet (Cat.No.T2694)

TargetMol

KN-62

Chemical Properties



CAS No. : 127191-97-3

Formula: C38H35N5O6S2

Molecular Weight: 721.84

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	KN-62 is a potent and specific Ca2+/calmodulin-dependent protein kinase II (CaMKII) inhibitor with Ki of 0.9 μM.
Targets(IC50)	CaMK,Autophagy,P2X Receptor
In vitro	KN-62 administration in adult rats reduces the expression levels of brain-derived neurotrophic factor (BDNF) mRNA induced by epilepsy in the brain.
In vivo	KN-62 inhibits the proliferation of K562 cells and blocks cell cycle progression. When administered at 10 μM to rat pancreatic islet cells, KN-62 inhibits insulin secretion stimulated by carbachol and potassium. Furthermore, KN-62 suppresses the phosphorylation of Ca2+/CaM kinase induced by A23187 in PC12 D cells.
Kinase Assay	Kinase assay: Total kinase activity of CaMKII, determined in a standard 2 min assay (100 μL), contained 35 mM HEPES, 10 mM MgCl2, 1 mM CaCl2, 10 μg of chicken gizzard myosin 20-kD light chain, 0.1 μM calmodulin, and 10 μM [γ-33]ATP at 30 °C. The kinase reaction is halted by adding 1 mL of 10% trichloroacetic acid.
Cell Research	For cell growth analysis, K562 cells are plated in a 3-cm dish with 5 mL of culture medium containing various concentration of KN-62. After two days in these condition cell numbers are counted. (Only for Reference)

Solubility Information

Solubility	DMSO: 125 mg/mL (173.17 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 (2.77 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	1.3853 mL	6.9267 mL	13.8535 mL
5 mM	0.2771 mL	1.3853 mL	2.7707 mL
10 mM	0.1385 mL	0.6927 mL	1.3853 mL
50 mM	0.0277 mL	0.1385 mL	0.2771 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

Tokumitsu H, et al. J Biol Chem. 1990, 265(8), 4315-4320.
Zeng L, Lyu X, Yuan J, et al.STMN1 Promotes Tumor Metastasis in Non-small Cell Lung Cancer Through Microtubule-dependent And Nonmicrotubule-dependent Pathways.International Journal of Biological Sciences. 2024, 20(4): 1509.
Wenham RM, et al. Biochem Biophys Res Commun. 1992, 189(1), 128-133.
Minami H, et al. Biochem Biophys Res Commun. 1994, 199(1), 241-248.
Murray KD, et al. Eur J Neurosci. 1998, 10(1), 377-387.
Pellicena P, et al. Front Pharmacol. 2014, 20;5:21.
Manosso LM, et al. Antidepressant-like effect of zinc is dependent on signaling pathways implicated in BDNF modulation. Prog Neuropsychopharmacol Biol Psychiatry. 2015 Jun 3;59:59-67.