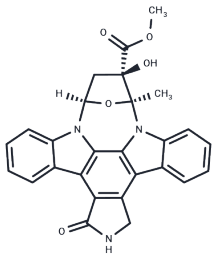
Data Sheet (Cat.No.T15636)

TargetMol

K-252a

Chemical Properties



CAS No. :	99533-80-9
Formula:	C27H21N3O5
Molecular Weight:	467.47
Storage:	Store at low temperature 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	K-252a is a protein kinase inhibitor targeting serine-threonine, tyrosine, and CAM kinases. In vitro, it blocks NGF-induced TrkA signalling and neural differentiation, exhibiting antitumour, antibacterial, anti-inflammatory, and neuroprotective activities.
Targets(IC50)	CaMK,Apoptosis,Antibiotic,Autophagy,PKA,PKC,Serine/threonin kinase,Trk receptor, Tyrosinase
In vitro	**Methods**: LINC00641 overexpressing cell lines were treated with K-252a (1.7 nM, 6 hours), and the expression of target proteins in cells was detected by Western blotting. **Results**: K-252a can reduce the levels of p-Akt and p-TrkB in LINC00641 overexpressing cell lines. [3] **Methods**: PC12 subclone h cells were treated with K-252a (3-100 nM, 8 days) to study its effect on cell viability. **Results**: K-252a can inhibit NGF-induced neurite outgrowth. [4]
In vivo	**Methods**: Mice were treated with K-252a (20 mg/kg, intraperitoneal injection, once a day for 5 days) and their neurological function was evaluated. **Results**: K-252a was able to inhibit the TH-induced neuroprotective effect in mice. [5]

Solubility Information

Solubility	DMSO: 40 mg/mL (85.57 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 (4.28 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	2.1392 mL	10.6959 mL	21.3917 mL
5 mM	0.4278 mL	2.1392 mL	4.2783 mL
10 mM	0.2139 mL	1.0696 mL	2.1392 mL
50 mM	0.0428 mL	0.2139 mL	0.4278 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

Yasuzawa, T., et al. The structures of the novel protein kinase C inhibitors K-252a, b, c AND d Journal of Antibiotics 39(8), 1072-1078 (1986).
Ge J B, Jiang B, Shi T S, et al.Cucurbitacin B exerts significant antidepressant-like effects in a chronic unpredictable mild stress model of depression: Involvement of the hippocampal BDNF-TrkB system.International Journal of Neuropsychopharmacology.2023: pyad052.
Davis, P.D., et al. Inhibitors of protein kinase C. 1.1 2,3-bisarylmaleimides Journal of Medicinal Chemistry 35, 177-184 (1992).
Qingxia Chen, et al. LncRNA LINC00641 Sponges miR-497-5p to Ameliorate Neural Injury Induced by Anesthesia via Up-Regulating BDNF. Front Mol Neurosci. 2020 Jun 30;13:95.
S Hashimoto, et al. K-252a, a potent protein kinase inhibitor, blocks nerve growth factor-induced neurite outgrowth and changes in the phosphorylation of proteins in PC12h cells. J Cell Biol. 1988 Oct;107(4):1531-9.
Rui Zhang, et al. Tenacissoside H promotes neurological recovery of cerebral ischaemia/reperfusion injury in mice by modulating inflammation and oxidative stress via TrkB pathway. Clin Exp Pharmacol Physiol. 2021 May;48(5):757-769.