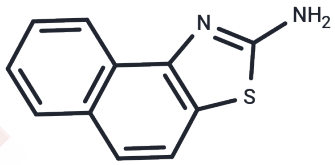
Data Sheet (Cat.No.T5180)

TargetMol

SKA-31

Chemical Properties



CAS No. : 40172-65-4

Formula: C11H8N2S

Molecular Weight: 200.26

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	SKA-31 (Naphtho[1,2-d]thiazol-2-ylamine) is an activator of KCa3.1 and KCa2 channels (EC50s: 260, 2900, 2900 nM for KCa3.1, KCa2.1 and KCa2.2 respectively).
Targets(IC50)	Potassium Channel
In vitro	SKA-31 activates KCa2.1 with EC(50) values of 2.9 microM, KCa2.2 with an EC(50) value of 1.9 microM, KCa2.3 with EC(50) values of 2.9 microM, and KCa3.1 with EC(50) values of 260 nM. SKA-31 activated native KCa2.3 and KCa3.1 channels in murine endothelial cells [1]. SKA-31 (1 μM) activated KCa3.1 and KCa2.3 channels and induced membrane hyperpolarization in CAEC of wt (ΔMP -45 mV). SKA-31 (200 nM, 500 nM) significantly enhanced EDHF vasodilations in wt [2].
In vivo	Administration of 10 and 30 mg/kg SKA-31 lowered mean arterial blood pressure by 4 and 6 mm Hg in normotensive mice and by 12 mm Hg in angiotensin-II-induced hypertension [2]. SKA-31 (10 μM) inhibited myogenic tone by 80% in cremaster and ~65% in middle cerebral arteries, with IC50 values of ~2 μM in both vessels [3].
Cell Research	Jurkat E61 and MEL cells were seeded at 10^5 cells/ml in 12-well plates. SKA-31 was added at concentrations of 10 and 100 μM in a final DMSO concentration of 0.1%, which was found not to affect cell viability. After 48 h, the cells in each well were well mixed and resuspended, and the number of trypan blue-positive cells in three aliquots from each well was determined under a light microscope. The test was repeated twice [1].
Animal Research	For intravenous injection, SKA-31 was dissolved at 10 mg/ml in a mixture of 10% Cremophor EL and 90% saline and injected at 10 mg/kg. For intraperitoneal application, SKA-31 was dissolved at 10 mg/ml in Miglyol 812 neutral oil (caprylic/capric triglyceride). After tail vein injection of the aqueous solution or intraperitoneal administration of the oily solution, approximately 200 μl of blood was collected from the tail into EDTA blood sample collection tubes at various time points. For very early time points (3, 5, and 10 min) after intravenous administration, blood samples were obtained by cardiac puncture under deep isoflurane anesthesia. Plasma was separated by centrifugation and stored at -80°C pending analysis. After determining that SKA-31 plasma concentrations peaked 2 h after application (10 mg/kg i.p.), we took blood samples under deep isoflurane anesthesia by cardiac puncture from a group of three rats before sacrificing the animals to remove brain, heart, liver, spleen, and fat. Tissue samples were homogenized in 1 ml of H2O with a homogenizer, and the protein was precipitated with 1 ml of acetonitrile. The samples were then centrifuged at 3000 rpm,

Animal Research	and supernatants were concentrated to 1 ml. Plasma and homogenized tissue samples were purified using C18 solid-phase extraction cartridges. Elution fractions corresponding to SKA-31 were evaporated to dryness under nitrogen and dissolved in acetonitrile [1].

Solubility Information

Solubility	DMSO: 30 mg/mL (149.81 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 (9.99 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	4.9935 mL	24.9675 mL	49.9351 mL
5 mM	0.9987 mL	4.9935 mL	9.987 mL
10 mM	0.4994 mL	2.4968 mL	4.9935 mL
50 mM	0.0999 mL	0.4994 mL	0.9987 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

Sankaranarayanan A, Naphtho[1,2-d]thiazol-2-ylamine (SKA-31), a new activator of KCa2 and KCa3.1 potassium channels, potentiates the endothelium-derived hyperpolarizing factor response and lowers blood pressure. Mol Pharmacol. 2009 Feb;75(2):281-95.

Hasenau AL, et al. Improvement of endothelium-dependent vasodilations by SKA-31 and SKA-20, activators of small- and intermediate-conductance Ca2+ -activated K+ -channels. Acta Physiol (Oxf). 2011 Sep;203(1):117-26.

Mishra RC, et al. Inhibition of Myogenic Tone in Rat Cremaster and Cerebral Arteries by SKA-31, an Activator of Endothelial KCa2.3 and KCa3.1 Channels. J Cardiovasc Pharmacol. 2015 Jul;66(1):118-27.

Tel:781-999-4286 E_mail:info@targetmol.com Address:34 Washington Street,Wellesley Hills,MA 02481